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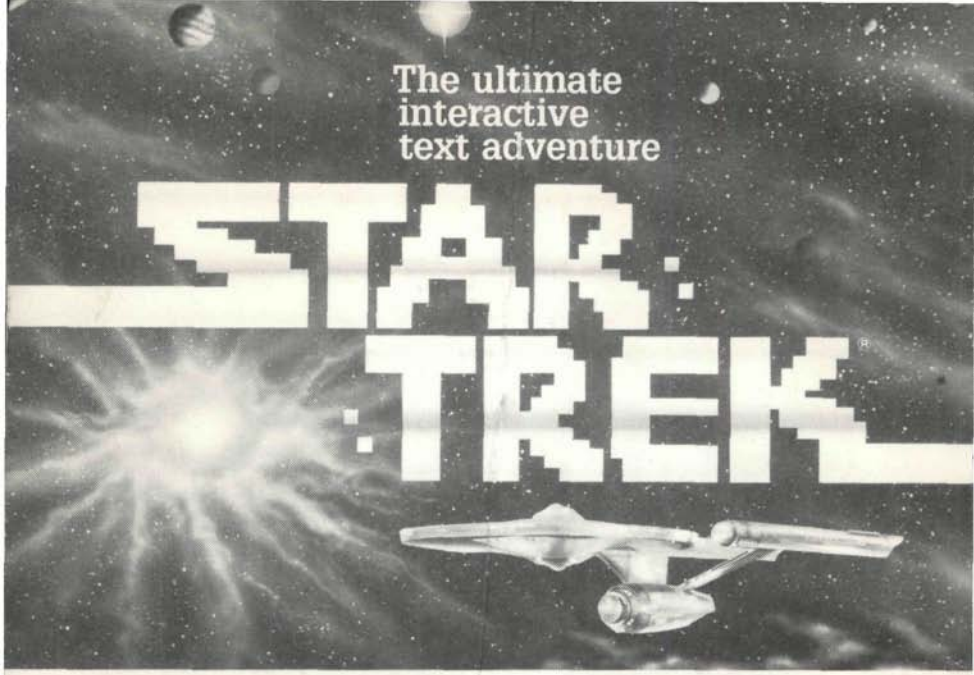

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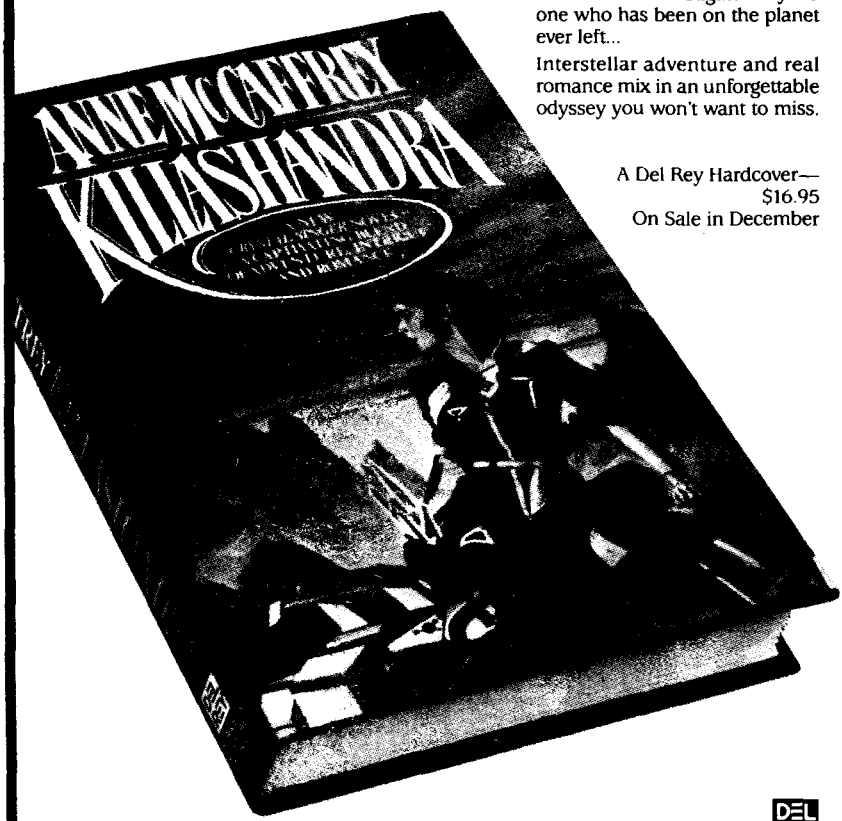

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Editorial

"DO IT OUR WAY!"

Stanley Schmidt

The first purpose of science fiction, as I see it, is entertainment; but a close second is the exploration of a wide range of possible futures. Some of this exploration is carried out in the stories we print, but it continues in your feedback—the letters that readers write commenting on the stories. All such comments and criticisms are welcome, but I've noticed one class of them which crops up from time to time which I find a bit disturbing because it seems curiously at odds with the notion of exploring the widest possible range of future options. Since such comments occasionally come from people who I know from other direct evidence are intelligent and thoughtful, I suspect that in these cases they haven't thought through the implications of what they are saying as thoroughly as they might.

The particular example I'm going to use as a starting point happens to deal with the portrayal of women in a certain story, but I'd probably better emphasize at the outset that that is *not* what I'm objecting to. I could just as well use examples commenting on the portrayal of attitudes toward environmentalism, war, crime, smoking, race, diet, dress, conservative or liberal politics, or almost any other facet of human life and society—all of which, of course, are subject to change with time. The example at hand is the one I use simply because it *is* at hand—others would serve as well, but I would have to dig them out of the files.

This one attacks what its writer sees as the "sexism" of the story's author. "The strong man protecting the helpless female," it says, "is a stereotype better left to the past." Referring to a woman as "girl," it goes on, reveals the author's "patronizing attitude toward women." And so on.

Now, it happens that I agree with this reader that women should be regarded and treated, in both reality and fiction, as "fully human beings and not irrational masses of reflexes." But I disa-

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gree with several details of the way he applies this fine sentiment to the condemnation of a particular story. To begin with, I know the author in question well enough to know that the label "patronizing attitude toward women" does not fit and does him a serious injustice; the writer of the letter, I suspect, doesn't know him at all. I should not need to point out the inadvisability of presuming to psychoanalyze a stranger on the basis of a single piece of fiction. A good story is likely to contain characters with many different viewpoints and attitudes, *none* of which—not even that of the narrator—necessarily reflects that of the author. Some authors are very much like their work; others are very different. In any case, no single example of a person's work can be assumed, in isolation, to be typical of all.

Which leads me to the first of three main points I want to make by way of leading up to what really bothers me about this sort of criticism: *No* one *portrayal of a character can be reliably construed as sexist* (or racist, antienvironmentalist, militarist, antimilitarist, or whatever it is that bothers you). I shall not dwell long on this point; I have dealt at length elsewhere with the dangers of assuming that a portrayal of an individual is intended as a portrayal of a group. (See, for example, "Equal Rights for Dumb Blondes," in the August 1979 issue, or the last page of "Brass Tacks" for May 1985.) Here I will say only that if *all* our stories showed *only* stereotypically strong men and helpless women, we'd have a serious problem. But they don't, as should be obvious to anybody who reads *all* our stories instead of putting a disproportionate emphasis on one that rubs him or her the wrong way. The real world does include strong men and helpless women, among a great many other types, and I will not ban *any* of them from our pages.

Point two: *The gains we have made, assuming that they are in fact gains, are not guaranteed permanent.* I would *like* to believe that once women have been widely recognized as full-fledged people, environmental impact recognized as an important consideration in industrial development, etc., all these things will remain true forever after and the future will continue to build on these accomplishments. Unfortunately, history won't let me. I have seen too many oscillations in social attitudes, not just through the musty mists of history books, but through first-hand experience during my own few years on this planet. The only thing I seem able to count on as a permanent feature of "the human condition" is change. I expect the future to bring attitudes and structures unlike any that have occurred before, and it is certainly a major task of science fiction to try to imagine those. But I must also believe that any attitude or action of which mankind has already shown itself capable can and probably will recur—and those, too, are fair game as ingredients of imagined futures. Any one of them may be a principal theme of a story, but a story—especially a short story—cannot be expected to do an in-depth exploration of every detail it mentions. Some will just be parts of

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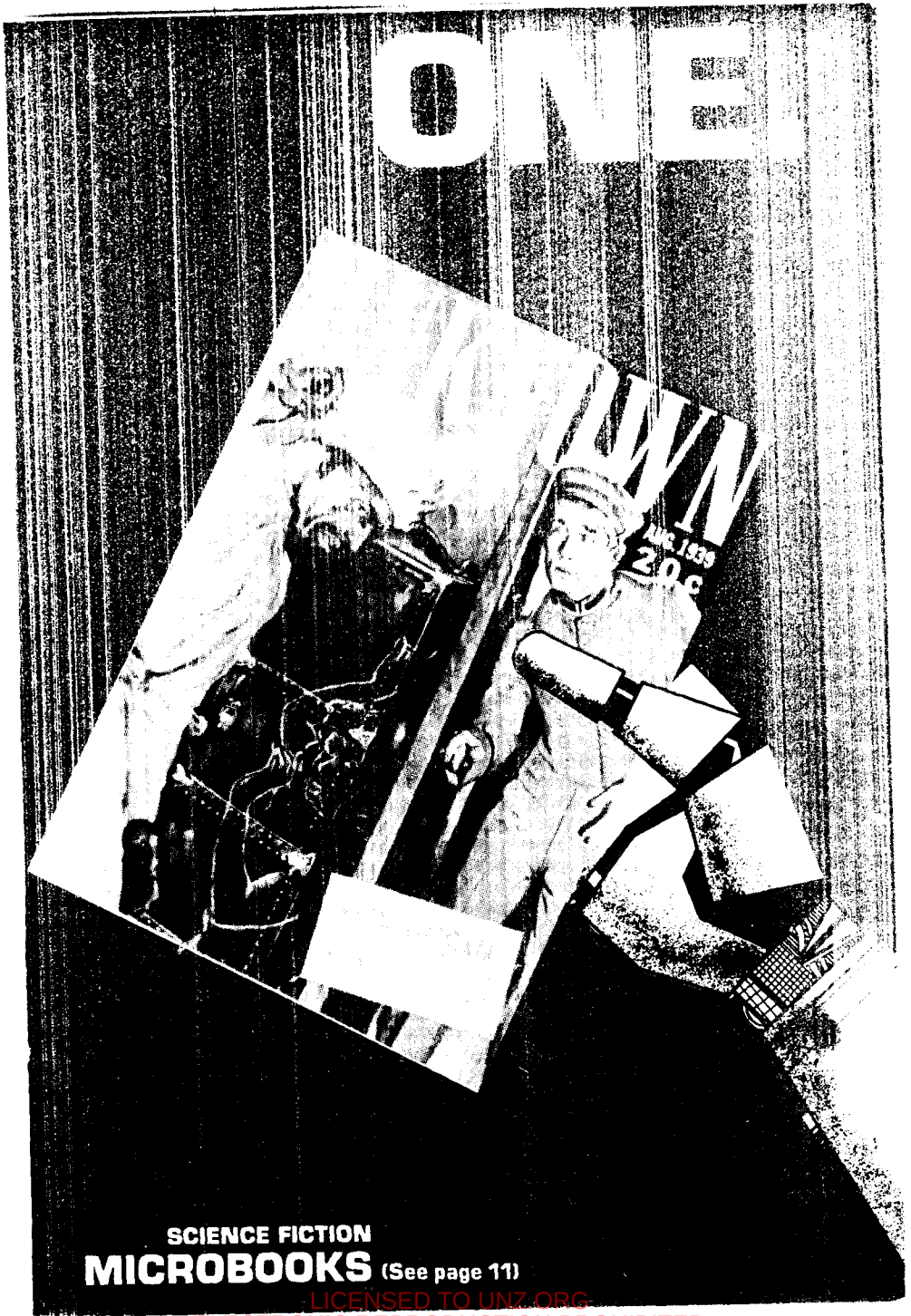

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the background, incidental parts of "the way things are" in that time and place, to be accepted at face value for the duration of the story. Anything which has already proved plausible (by happening!), as well as anything which an author can rationalize believably, can serve in either of these roles.

Point three: *What we perceive as gains may turn out not to be, in the long run.* Yes, many of us find it quite self-evident that our recently won beliefs represent wisdom which eluded our ancestors through the ages. But *so did every previous generation.* What rational basis do we have for believing that our current version of The Last Word is really better than theirs? Only the fact that it seems the best we can do in the light of what we now know—or think we know. The best we can do is, by definition, the best we can do, and we owe that to ourselves and our fellow creatures. We should certainly make every effort to base our actions on the best information at our disposal. But science fiction readers and writers, of all people, ought to recognize that that

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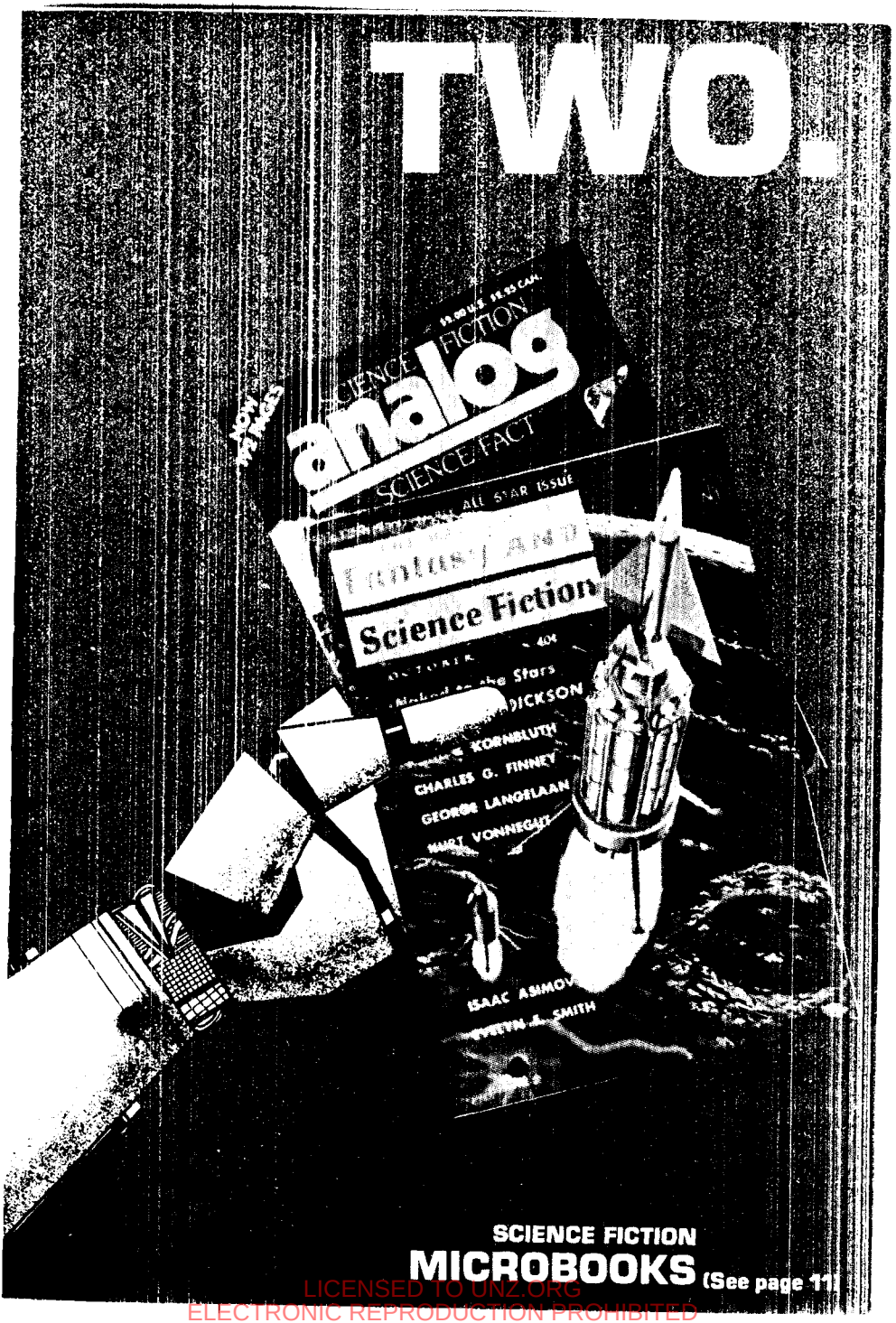

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information could conceivably be incomplete or partly mistaken. What seems like self-evident progress now may turn out to have detrimental side effects which won't show up for a long time. Of course I can't say what they are, or even that they *will* turn out to exist; indeed, I can hope they won't. If I could say now *how* my present beliefs could be improved, I would set about doing so at once. Plainly, I can't—but I can (and should) bear constantly in mind the possibility that *anything* I now believe is subject to future revision. Otherwise we will seem just as short-sighted to our descendants as our ancestors often seem to us—and for equally good reason.

What I object to, in all criticism of the type I'm discussing, is their implicit (or occasionally explicit) demand that the future always be portrayed in accord with the fashionable biases of the present—their insistence, in other words, that our descendants must live by *our* precepts rather than their own. Even the "our" of the present is commonly used to mean something far more unanimous than the facts warrant. When my aforementioned correspondent says that certain words are "no longer considered acceptable forms of address for women," he is on shaky ground unless he adds the qualification that they are no longer considered acceptable *by certain groups of people*. I know women who bristle at "lady"—and I know others, including some actively concerned with women's equality, who consider "girl" too innocuous to get worked up about, and even use it themselves. I respect their views, too. It is all too easy for someone promoting a particular change in attitude or usage to treat it as if it were already a universal *fait accompli*, and all too easy for someone who agrees with him to go along with it. But as long as it isn't, as long as there are any other views being honestly held, I cannot presume to suppress those others—regardless of whether I like them. If they are sufficiently in error, I can hope that wiser heads will eventually prevail. If not—if they turn out to have more merit than you or I thought—let's hope that we, too, can find the good grace to admit we were wrong.

Science fiction, as John Campbell remarked on various occasions, is a testing ground for ideas and ways of life—a place where they can be tried out in "analog simulation" before real people are subjected to them. (That's what this magazine's title means.) The more *different* options it tries out, the better. I'm certainly interested in seeing lots of stories present positive, constructive, "socially progressive" possibilities. I see far too many stories which show how wretched the future can be. I suppose these have a certain limited value, as warnings, but I'm far more interested in seeing stories which offer well thought-out ideas on how to make the future *better*. But to limit the options considered to those which appear self-evidently better by any *present* set of standards—to require that our imagined descendants "do it our way"—largely defeats the purpose. ■

● If people behaved like governments, you'd call the cops. Kelvin Throop

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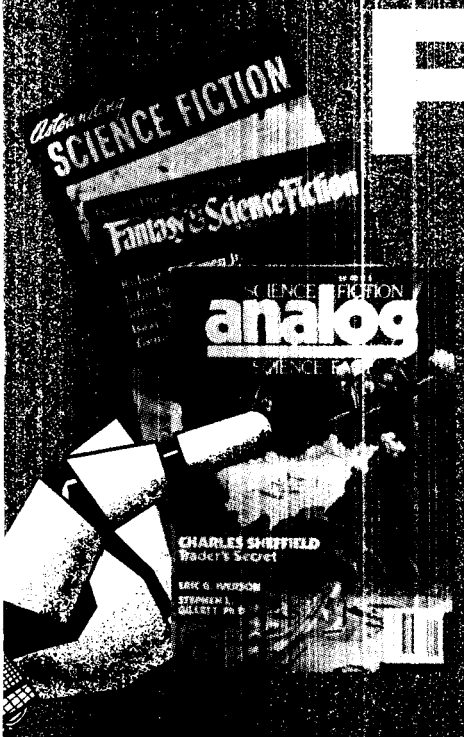

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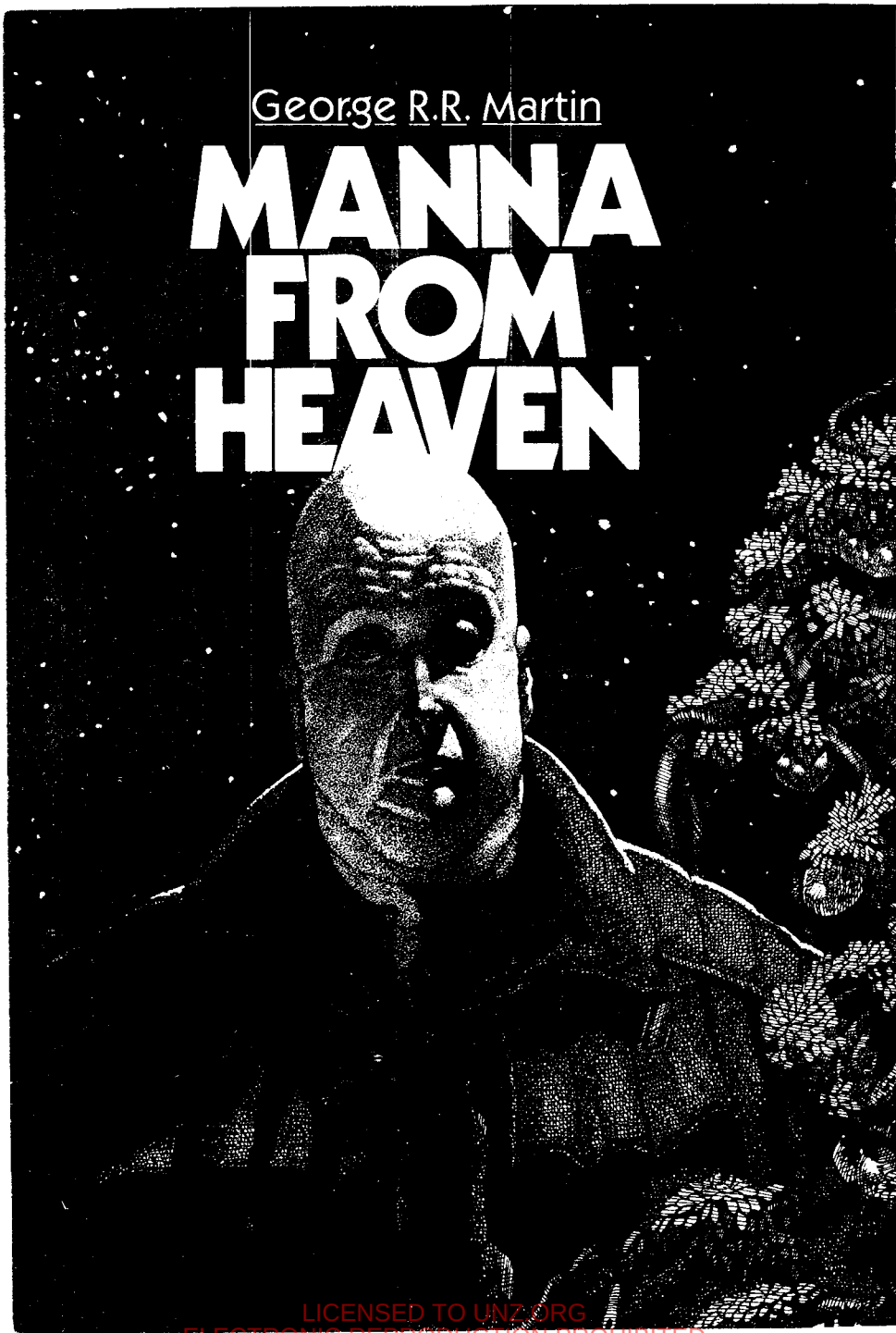

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One of the hardest
principles for human
beings to accept is that *solving*
a problem that runs
deep requires treatment
that does the same

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The S'uthlamese armada was sweeping the outskirts of the solar system, moving through the velvet darkness of space with all the stately silent grace of a tiger on the prowl, on an interception course with the *Ark*.

Haviland Tuf sat before his master console, scanning the banks of telescreens and computer monitors with small, careful turns of his head. The fleet angling to meet him appeared more formidable with every passing moment. His instruments reported some fourteen capital ships and swarms of smaller fighters. Nine bulbous silver-white globes, bristling with unfamiliar weaponry, comprised the wings of the formation. Four long black dreadnaughts served as outriders on the flanks of the wedge, their dark hulls crackling with energy. The flagship in the center was a colossal saucer-shaped fort with a diameter Tuf's sensors measured as six kilometers from rim to rim. It was the largest spaceship that Haviland Tuf had seen since the day, more than ten years past, when he had first sighted the derelict *Ark*. Fighters swarmed around the saucer like angry stinging insects.

Tuf's long pale hairless face was still and unreadable, but in his lap, Dax made a small sound of disquiet as Tuf pressed his fingertips together.

A flashing light indicated an incoming communication.

Haviland Tuf blinked, reached out with calm deliberation, and took the call.

He had expected a face to materialize on the telescreen in front of him. He was disappointed. The caller's features were hidden by a faceplate of black plasteel, inset into the helmet of a mirror-finish warsuit. A stylized representation of the globe of S'uthlam ornamented the flanged crest upon his forehead. Behind the faceplate, wide-spectra sensors glowed red like two burning eyes. It reminded Haviland Tuf of an unpleasant man he had once known.

"It was unncessary to dress formally on my account," Tuf said flatly. "Moreover, while the size of the honor guard you have sent to meet me tickles my vanity somewhat, a much smaller and less prepossessing squadron would have been more than sufficient. The present formation is so large and formidable as to give one pause. A man of a less trusting nature than myself might be tempted to misconstrue its purpose and suspect some intent to intimidate."

"This is Wald Ober, commander of the Planetary Defense Flotilla of S'uthlam, Wing Seven," the grim visage on telescreen announced in a deep, distorted voice.

"Wing Seven," Tuf repeated. "Indeed. This suggests the possibility of at least six other similarly fearsome squadrons. It would seem that S'uthlamese planetary defenses have been augmented somewhat since my last call."

Wald Ober wasn't interested. "Surrender at once, or be destroyed," he said bluntly.

Tuf blinked. "I fear some grievous misunderstanding."

"A state of war exists between the Cybernetic Republic of S'uthlam and the so-called alliance of Vandeen, Jazbo, Henry's World, Skyrmir, Roggandor, and the Azure Triune. You have entered a restricted zone. Surrender or be destroyed."

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"You misapprehend me, sir," Tuf said. "I am a neutral in this unfortunate confrontation, of which I was unaware until this moment. I am part of no faction, cabal, or alliance, and represent only myself, an ecological engineer with the most benign of motives. Please do not take alarm at the size of my ship. Surely in the small space of five standard years the esteemed spinnerets and cybertechs of the Port of S'uthlam cannot entirely have forgotten my previous visits to your most interesting world. I am Haviland—"

"We know who you are, Tuf," said Wald Ober. "We recognized the *Ark* as soon as you shifted out of drive. The alliance doesn't have any dreadnaughts thirty kilometers long, thank life. I have specific orders from the High Council to watch for your appearance."

"Indeed," said Haviland Tuf.

"Why do you think the wing is closing in on you?" Ober said.

"As a gesture of affectionate welcome, I had hoped," Tuf said. "As a friendly escort bearing kudos, salutations, and gift baskets of plump, fresh spiced mushrooms. I see that this assumption was unfounded."

"This is your third and final warning, Tuf. We'll be in range in less than four standard minutes. Surrender now or be destroyed."

"Sir," said Tuf, "before you make a grievous error, please consult with your superiors. I am certain there has been a lamentable communications error."

"You have been tried in absentia and found guilty of being a criminal, a heretic, and an enemy of the people of S'uthlam."

"I have been grossly misperceived," Tuf protested.

"You escaped the flotilla ten years ago, Tuf. Don't think to do it again. S'uthlamese technology does not stand still. Our new weaponry will shred those obsolete defensive shields of yours, I promise you that. Our top historians have researched that ponderous EEC derelict of yours. I supervised the simulations myself. Your welcome is all prepared."

"I have no wish to seem ungracious, but it was unnecessary to go to such lengths," said Tuf. He glanced at the banks of telescreens that lined the consoles along both sides of the long, narrow room, and studied the phalanx of S'uthlamese warships rapidly closing upon the *Ark*. "If this unprovoked hostility has its root in my outstanding debt to the Port of S'uthlam, rest assured that I am prepared to render payment in full immediately."

"Two minutes," said Wald Ober.

"Furthermore, if S'uthlam is in need of additional ecological engineering, I find myself inclined to offer you my services at a much reduced price."

"We've had enough of your solutions. One minute."

"It would seem I am left with but a single viable option," said Haviland Tuf.

"Then you surrender?" the commander said suspiciously.

"I think not," said Haviland Tuf. He reached out, brushed long fingers across a series of holographic keys, and raised the *Ark*'s ancient defensive screens.

Wald Ober's face was hidden, but he managed to get a sneer into his voice. "Fourth generation imperial screens,

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triple redundancy, frequency overlapping, all shield phasing coordinated by your ship's computers. Duralloy plate armor on your hull. I told you we'd done our research."

"Your hunger for knowledge is to be commended," Tuf said.

"The next sarcasm you mouth may be your last, trader, so you had better take care to make it a good one. The point is, we know exactly what you've got, and we know to the fourteenth decimal how much damage an EEC seedship's defenses can absorb. We're prepared to give you more than you can handle." He turned his head. "*Prepare to commence fire,*" he snapped at unseen subordinates. When the dark helmeted face swiveled back toward Tuf, Ober added, "We want the *Ark* and you can't stop us from taking it. Thirty seconds."

"I beg to differ," said Tuf calmly.

"They'll fire at my command," Ober said. "If you insist, I'll count down the final seconds of your life. Twenty. Nineteen. Eighteen . . ."

"Seldom have I heard such vigorous counting," said Tuf. "Please do not lose track on account of my distressing news."

". . . Fourteen. Thirteen. Twelve."

Tuf folded his hands atop his stomach.

"Eleven. Ten. Nine." Ober looked uneasily to one side, then back at the screen.

"Nine," announced Tuf. "A fine number. It is customarily followed by eight, thence to seven."

"Six," Ober said. He hesitated. "Five."

Tuf waited silently.

"Four. Three." He stopped. "*What distressing news?*" he roared at the screen.

"Sir," said Tuf, "if you must shout, you will only oblige me to adjust the volume on my communications equipment." He raised a finger. "The distressing news that the mere act of broaching the *Ark*'s defensive shields, as I have no doubt you can easily accomplish, will trigger a small thermonuclear device that I have previously secreted within the ship's cell library, thereby instantaneously destroying the very cloning materials that make the *Ark* unique, invaluable, and widely coveted."

There was a long silence. The glowing crimson sensors beneath the darkness of Wald Ober's faceplate seemed to smoulder as they stared into the screen at Tuf's blank features. "You're bluffing," the commander said at last.

"Indeed," said Tuf. "You have found me out. How foolish to think I might hoodwink a man of your perspicacity with such a blatant and juvenile deception. And now I fear you will fire upon me, rend my poor obsolete defenses, and demonstrate my lie for good and all. Permit me only a moment to make my farewells to my cats." He folded his hands neatly atop his great paunch, and waited for the commander to reply. The S'uthlamese flotilla, his instruments avowed, was now well within range.

"I'll do just that, you damned abortion!" Wald Ober swore.

"I wait with sullen resignation," said Tuf, unmoving.

"You have twenty seconds," Ober said.

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SIX CENTURIES AFTER THE LAST WAR,
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"I fear my news has confused you. The count previously stood at three. Nonetheless. I shall take shameless advantage of your error and savor each instant remaining to me."

They stared at each other, face to face and screen to screen, for the longest time. Snug in Tuf's lap, Dax began to purr. Haviland Tuf reached down to stroke the cat's long black fur, and Dax purred even more loudly and began kneading Tuf's knee with his claws.

"Oh, abort it to hell and gone," said Wald Ober. He pointed at the screen. "You may have us checked for the moment, but I warn you, Tuf, don't even *think* about trying to get away. Dead or fled, your cell library would be equally lost to us. And given a choice I'd sooner you be dead."

"I comprehend your position," said Haviland Tuf, "though I, of course, would sooner be fled. Yet I do have a debt to pay to the Port of S'uthlam, and therefore could not honorably depart as you fear, so please accept my assurances that you will have every opportunity to ponder my visage, and I your fearsome mask, while we sit locked in this irksome impasse."

Wald Ober never got the chance to reply. His battle mask vanished abruptly from the screen, and was replaced by a woman's homely features: a broad crooked mouth, a nose that had been broken more than once, hard leathery skin with the deep blue-black cast that comes of lots of exposure to hard radiation and decades of anti-carcinoma pills, pale bright eyes in a nest of squint-folds, all of it surrounded by a lavish halo of coarse gray hair. "So much for getting tough," she said. "You win, Tuf. Ober, you're now an honor guard. Form up and escort him into the web, damn it."

"How thoughtful," said Haviland Tuf. "I am pleased to inform you that I am now prepared to tender the final payment due the Port of S'uthlam for the refitting of the *Ark*."

"I hope you brought some catfood too," Tolly Mune said drily. "That so-called 'five-year supply' you left me ran out almost two years ago." She sighed. "I don't suppose you'd care to retire and sell us the *Ark*?"

"Indeed not," said Tuf.

"I didn't think so. All right, Tuf, break out the beer. I'm coming to talk to you as soon as you reach the web."

"While I mean no disrespect, I must confess that I am not at the moment in the best frame of mind for entertaining such a distinguished guest as yourself. Commander Ober has recently informed me that I have been adjudged a criminal and heretic, a curious conception as I am neither a citizen of S'uthlam nor an adherent to its dominant religion, but no less disquieting for all that. I am agog with fear and worry."

"Oh, that," she said. "Just an empty formality."

"Indeed," Tuf said.

"Puling hell. Tuf, if we're going to steal your ship we need a good legal excuse, don't we? We're a goddamned government. We're *allowed* to steal the things we want as long as we put a shiny legal gloss over it."

"Seldom in my voyagings have I encountered any political functionary as frank as yourself, it must be admitted. The experience is refreshing. Still, as invigorated as I am, what assurance do

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I have that you will not continue your efforts to seize the *Ark* once aboard?"

"Who, me?" said Tolly Mune. "Now how could I do a thing like that? Don't worry, I'll come alone." She smiled. "Well, almost alone. You'd have no objections if I brought a cat, would you?"

"Certainly not," said Tuf. "I am pleased to learn that the felines I left in your custody have thrived in my absence. I shall eagerly anticipate your arrival, Portmaster Mune."

"That's First Councilor Mune to you, Tuf," she said, gruffly, before she wiped the screen.

No one had ever alleged that Haviland Tuf was overly rash; he took up a position twelve kilometers beyond the end of one of the great docking spurs of the orbital community known as the Port of S'uthlam, and he kept his shields up continuously as he waited. Tolly Mune rode out to meet him in the small starship Tuf had given her five years before, on the occasion of his previous visit to S'uthlam.

Tuf opened the shields to let her through, and cracked the great dome on the landing deck so she might sit down. *Ark*'s instrumentation indicated her ship was full of life forms, only one of which was human; the rest displayed feline parameters. Tuf set out to meet her, driving a three-wheeled cart with balloon tires, and wearing a deep green mock-velvet suit belted about his ample middle. On his head was a battered green duckbilled cap decorated with the golden theta of the Ecological Engineering Corps. Dax rode with him, an indolent sprawl of black fur draped across Tuf's broad knees.

When the airlock opened, Tuf drove with all deliberate speed through the scrapyard of battered spacecraft that he had somehow accumulated over the years, directly to where Tolly Mune, former Portmaster of S'uthlam, was thumping down the ramp of her ship.

A cat walked at her side.

Dax was on his feet in an instant, his dark fur bristling as if his huge, fluffy tail had just been plugged into an electric socket. His customary lethargy was suddenly gone; he leapt from Tuf's lap to the hood of the cart, drew back his ears, and hissed.

"Why, Dax," Tolly Mune said, "is that any way to greet a goddamned relative?" She grinned, and knelt to pet the huge animal by her side.

"I had expected either Ingratitude or Doubt," said Haviland Tuf, naming the two kittens he had given Tolly Mune on the occasion of his previous visit.

"Oh, they're fine," she said. "And so are all their goddamned offspring. Several generations' worth. I should have figured it when you gave me a pair. A fertile male and female. I've got . . ." She frowned, and counted quickly on her fingers, once through and then again. ". . . let's see, sixteen, I think. Yes. And two pregnant." She jerked a thumb at the starship behind her. "My ship has turned into one big cat-house. Most of them don't care any more for gravity than I do. Born and raised in zero-g. I'll never understand how they can be so graceful one moment and so hilariously clumsy the next."

"The feline heritage is rife with contradiction," said Tuf.

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"This is Blackjack." She picked him up in her arms and rose to her feet. "Damn, he's *heavy*. You never realize that in zero-g."

Dax stared at the other feline, and hissed.

Blackjack, cradled against the chest of Tolly Mune's old, smelly skinthins, looked down at the huge black tom with disinterested haughtiness.

Haviland Tuf stood two-and-a half meters tall, with bulk to match, and Dax was just as large, compared to other cats, as Tuf compared to other men.

Blackjack was larger.

His hair was long and silky, smoky gray on top with a lighter silver undercoat. His eyes were silver-gray as well, vast deep pools, serene and somehow eerie. He was the most incredibly beautiful animal ever to dwell in the expanding universe, and he knew it. His manner was that of a princeling born to the royal purple.

Tolly Mune slid awkwardly into the seat beside Tuf. "He's telepathic too," she said cheerfully, "just like yours."

"Indeed," said Haviland Tuf. Dax was stiff and angry in his lap. He hissed again.

"Jac here was the way I saved the other cats," Tolly Mune said. Her homely face took on a look of reproach. "You said you were leaving me five years of catfood."

"For two cats, madam," said Tuf. "Obviously, sixteen animals consume more than Doubt and Ingratitude alone." Dax edged closer, bared his teeth, bristled.

"I had problems when the stuff ran out. Given our food shortfalls, I had to justify wasting calories on vermin."

"Perhaps you might have considered steps to limit your feline reproduction," Tuf said. "Such a strategy would undoubtedly have yielded results. Thus your home could have served as an educational and sobering illustration of S'uthlamese problems, in microcosm as it were, and the solutions thereof."

"Sterilization?" Tolly Mune said. "That's anti-life, Tuf. Out. I had a better idea. I described Dax to certain friends, biotechs, cybertechs, you know, and they made me a familiar of my own. Blackjack's almost two years old. He's been so useful I've been given a food allowance for the others. He's helped my political career no end, too."

"I have no doubt," said Tuf. "I note that he does not appear discomfitted by gravity."

"Not Blackjack. These days they need me downstairs a hell of a lot more than I'd like, and Jac goes with me. Everywhere."

Dax hissed again, and made a low rumbly threatening sound. He darted toward Blackjack, then drew back suddenly and spit disdain at the larger cat.

"You better call him off, Tuf," Tolly Mune said.

"Felines sometimes demonstrate a biological compulsion to battle in order to establish deference rankings," Tuf said. "This is particularly true of tomcats. Dax, undoubtedly aided and abetted by his enhanced psionic capabilities, long ago established his supremacy over Chaos and my other cats. Undoubtedly he now feels his position threatened. It is not a matter for serious concern, First Councilor Mune."

"It is for Dax," she said, as the black tom crept closer. Blackjack, in her lap,

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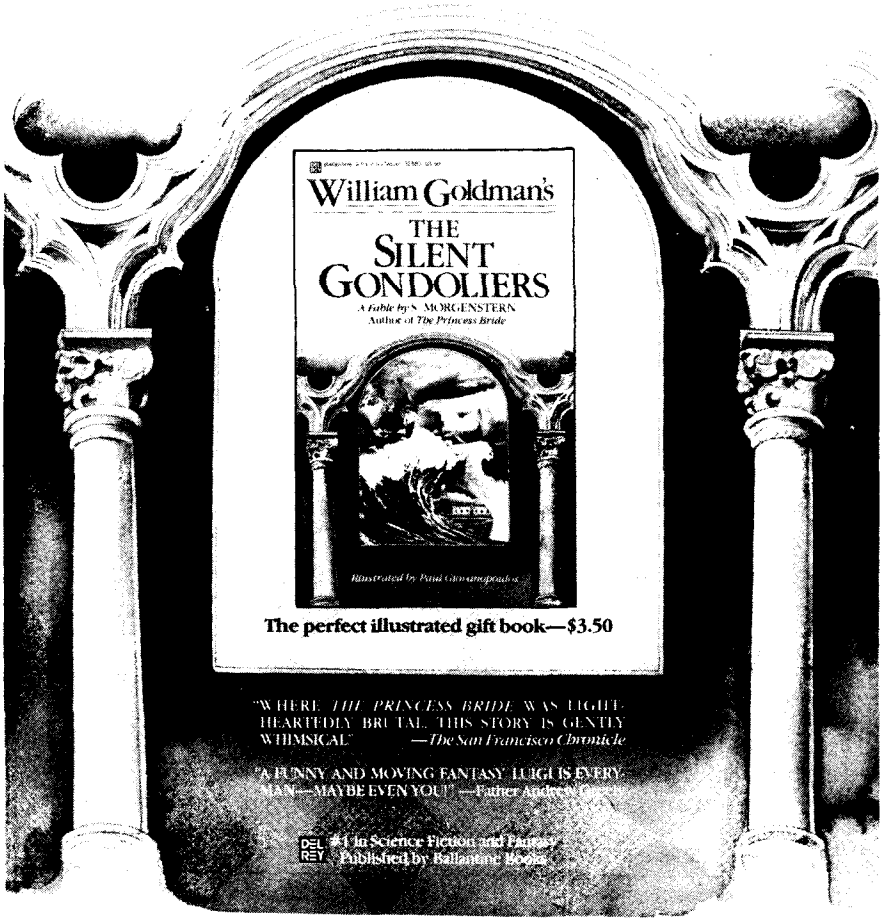

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looked up at his rival with vast boredom.

"I fail to grasp your point," said Tuf.

"Blackjack has those enhanced psionic capabilities too," said Tolly Mune. "Plus a few other, ah, advantages. Implanted duralloy claws, sharp as goddamned razors, concealed in special paw sheaths. A subcutaneous net of non-allogenic plasteel mesh that makes him awfully tough to hurt. Reflexes that have been genetically accelerated to make him twice as quick and dextrous as a normal cat. A very high pain threshold. I don't want to be puling crass about it or anything, but if he gets jumped, Blackjack will slice Dax into little bloody hairballs."

Haviland Tuf blinked, and shoved the steering stick over toward Tolly Mune. "Perhaps it might be best if you drove." He reached out, picked up his angry black tomcat by the ruff of the neck, and deposited him, screeching and spitting, in his lap, where he held him very still indeed. "Proceed in that direction," he said, pointing with a long pale finger.

"It appears," said Haviland Tuf, steepling his fingers as he regarded her from the depths of a huge wingback armchair, "that circumstances have altered somewhat since I last came to call upon S'uthlam."

Tolly Mune studied him carefully. His paunch was larger than it had been, and his long face was just as miserly of expression, but without Dax in his lap, Haviland Tuf looked almost naked. Tuf had shut the big black tom up on a lower deck to keep him away from Blackjack. Since the ancient seedship was thirty kilometers long and several of Tuf's other cats roamed the deck in question, Dax would scarcely lack for space or for companionship, but must be baffled and distraught nonetheless. The psionic tomcat had been Tuf's constant and inseperable companion for years, had even ridden in Tuf's ample pockets as a kitten. Tolly Mune felt a little sad about it.

But not *too* sad. Dax had been Tuf's hole card, and she'd trumped him. She smiled and ran her fingers through Blackjack's thick smoke-and-silver fur, eliciting another thunderous purr. "The more things change the more they stay the same," she said in answer to Tuf's comment.

"This is one of those venerable sayings that collapse upon close logical examination," Tuf said, "being obviously self contradictory on the face of it. If indeed things have changed upon S'uthlam, they obviously cannot have remained the same as well. To myself, coming as I have from a great distance, it is the changes that seem most notable. To wit, this war, and your own elevation to First Councilor, a considerable and unanticipated promotion."

"And a puling awful job," Tolly Mune said with a grimace. "I'd go back to being Portmaster in a blink, if I could."

"Your job satisfaction is not the subject under discussion," Tuf said. He continued. "It must also be noted that my welcome to S'uthlam was distinctly less cordial than on the occasion of my previous visit, much to my chagrin, and notwithstanding the fact that I have twice placed myself squarely between S'uthlam and mass famine, plague, can-

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nibalism, pestilence, social collapse, and other unpleasant and inconvenient events. Moreover, even the most venomously rude races frequently observe a certain rudimentary etiquette toward those who are bringing them eleven million standards, which you recall is the amount of principal remaining on my debt to the Port of S'uthlam. Ergo I had every reason to expect a welcome of a somewhat different nature."

"You were wrong," she said.

"Indeed," Tuf said. "Now that I have learned that you occupy the highest political office on S'uthlam, rather than a menial position upon a penal farm, I am frankly more mystified than ever as to why the Planetary Defense Flotilla felt it necessary to greet me with fierce bombastic threats, dour warnings, and exclamations of hostility."

Tolly Mune scratched at Blackjack's ear. "My orders, Tuf."

Tuf folded his hands atop his stomach. "I await your explanation."

"The more things change—" she began.

"Having already been pummeled with this cliché, I believe I grasp the small irony involved in it by now, so there is no need for you to repeat it over and over endlessly, First Councilor Mune. If you would proceed to the essence of the matter I would be deeply appreciative."

She sighed. "You know our situation."

"The broad outlines, certainly," Tuf admitted. "S'uthlam suffers from an excess of humanity, and a paucity of food. Twice I have performed formidable feats of ecological engineering in order to enable to S'uthlamese to forestall the grim spectre of famine. The details of your food crisis vary from year to year but I trust that the essence of the situation remains as I have outlined it."

"The latest projection is the worst yet."

"Indeed," said Tuf. "My recollection is that S'uthlam stood some one hundred nine standard years from mass planetary famine and societal collapse, assuming that my recommendations and suggestions were dutifully implemented."

"They tried, damn it. They did try. The meatbeasts, the pods, the ororos, neptune's shawl, everything's in place. But the change-over was only partial. Too many powerful people were unwilling to give up the luxury foodstuffs they preferred, so there are still large tracts of agri-land devoted to raising herds of food animals, entire farms planted with neograss and omni-grain and nano-wheat, that sort of thing. Meanwhile, the population curve has continued to rise, faster than ever, and the puling Church of Life Evolving preaches the sanctity of life and the golden role of reproduction in humanity's evolution to transcendence and godhood."

"What is the current estimate?" Tuf asked bluntly.

"Twelve years," said Tolly Mune.

Tuf raised a finger. "To dramatize your plight, perhaps you ought assign Commander Wald Ober to count down the remaining time over the vidnets. Such a demonstration would have a certain grim urgency that might inspire the S'uthlamese to mend their ways."

Tolly Mune winced. "Spare me your levity, Tuf. I'm First Councilor now,

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goddamn it, and I'm staring right into the pimpled ugly face of catastrophe. The war and the food shortages are only a part of it. You can't imagine the problems I'm facing."

"Perhaps not the fine detail," said Tuf, "yet the broad outlines are readily discerned. I make no claim to omniscience, but any reasonably intelligent person could observe certain facts and from them draw certain inferences. Perhaps these deductions thus arrived at are wrong. Without Dax, I cannot ascertain the truth of that. Yet somehow I think not."

"What puling facts? What inferences?"

"Firstly," said Tuf, "S'uthlam is at war with Vandeen and its allies. Ergo I can infer that the technocratic faction that once dominated S'uthlamese politics has yielded up power to their rivals, the expansionists."

"Not quite," said Tolly Mune, "but you've got the right puling idea. No faction has had a majority on the High Council for years, but the expansionists have gained seats in every election since you left. They're the plurality faction now, but not the majority. The re-armament program was started as a sop to them, but it turned out to be a wise idea. The allies made it damned clear years ago that an expansionist government meant war, so the rest of the factions have been keeping them out of power with a series of coalitions. Hell of a lot of good it did us, we got war anyway. In the last five years we've had nine First Councilors. I'm the latest, probably not the last."

"The grimness of your current projections suggests that this war has not yet actually touched your populace," Tuf said.

"Thank life, no," said Tolly Mune. "We were ready when the allied war fleet came calling. New ships, new weapons systems, everything built in secret. When the allies saw what was waiting for them, they backed off without firing a blast. But they'll be back, damn it. It's only a matter of time. We've got reports that they're preparing for a major strike."

"I might also infer," said Tuf, "from your general attitude and sense of desperation, that conditions upon S'uthlam itself are already deteriorating rapidly."

"How the hell do you know that?"

"It is obvious," said Tuf. "Your projection may indeed indicate mass famine and collapse to be some twelve standard years in the future, but this is hardly to say that S'uthlamese life will remain pleasant and tranquil until that moment, whereupon a bell will ring loudly and your world will fall to pieces. Such an idea is ludicrous. As you are now so close to the brink, it is only to be expected that many of the woes symptomatic of a disintegrating culture will already be upon you."

"Things are—puling hell, where do I begin?"

"The beginning is frequently a good place," said Tuf.

"They're my people, Tuf. That's my world turning down there. It's a good world. But lately—if I didn't know better, I'd think insanity was contagious. Crime is up some two hundred per cent since your last call. Murder is up five hundred per cent, suicide more than two thousand per cent. Service breakdowns become more common daily: blackouts,

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systems failure, random strikes, vandalism. We've had reports of cannibalism deep in the undercities. Not isolated instances, but entire puling cannibal *gangs*. Secret societies of all kinds, in fact. One group seized a food factory, and held it for two weeks, fought a pitched battle with world police. Another bunch of crazies have taken to kidnapping pregnant women and . . ." Tolly Mune scowled; Blackjack hissed. "This is hard to talk about. A woman with child has always been something special to the S'uthlamese, but these . . . I can hardly even call them people, Tuf, these *creatures* have cultivated a taste for—"

Haviland Tuf raised a hand, palm outward. "Say no more," he said. "I have grasped the inference. Continue."

"Lots of solitary maniacs too," she said. "Someone dumped a highly toxic waste into a food factory holding tank eighteen months ago. More than twelve hundred fatalities. Mass culture —S'uthlam has always been tolerant, but lately there's a hell of a lot more to be tolerant *of*, if you catch my float. There's a growing obsession with disfigurement, death, violence. We've had massive resistance to our attempts to reengineer the ecosystem according to your recommendations. Meatbeasts have been poisoned, blown up; fields of pods set afire. Organized thrill gangs hunt the goddamned wind-riders with harpoons and high-altitude gliders. It makes no goddmamned sense. The religious consensus—all kinds of weird cults have been emerging. And the war! Life only knows how many will die, but it's as popular as—hell, I don't know, it's *more* popular than sex, I think."

"Indeed," said Tuf. "I am surprised. I take it the imminence of disaster remains a closely guarded secret of the S'uthlamese High Council, as in years past."

"Unfortunately, no," Tolly Mune said. "One of the minority councilors decided she couldn't hold her bladder, so she called in the puling peeps and pissed the news out all over the vidnets. I think she wanted to win a few million more votes. The hell of it is, it worked. It also kicked off another goddamned scandal and forced yet another First Councilor out of office. By then there was no place to look for a new human sacrifice but upstairs. Guess who got grabbed? Our favorite vidshow heroine, controversial bureaucrat, and ma spider, that's who."

"You are obviously referring to yourself," said Tuf.

"By then nobody hated me much any more, I had a certain reputation for efficiency, the remnants of a popular romantic image, and I was minimally acceptable to most of the big council factions. That was three months ago. So far it's been one hell of a term of office." Her smile was grim. "The Vandeeni listen to our newsfeeds too. Simultaneous with my goddamned promotion, they decided S'uthlam was, I quote, a threat to the peace and stability of the sector, end quote, and got together their goddamned allies to try and decide what to do about us. The bunch of them finally gave us an ultimatum: enforce immediate rationing and compulsory birth control, or the alliance would occupy S'uthlam and enforce it for us."

"A viable solution, but not a tactful

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one," Tuf commented. "Thus your present war. Yet all this fails to explain your attitude toward myself. I have been able to offer your world succor twice before. Surely you did not feel I would be remiss in my professional duties on this third occasion."

"I figured you'd do what you could." She pointed a finger. "But on your own terms, Tuf. Hell, you've helped, yes, but always on your own terms, and all of your solutions have proved unfortunately impermanent."

"I warned you repeatedly that my efforts were mere stopgaps," Tuf replied.

"There are no calories in warnings, Tuf. I'm sorry, but we have no choice. This time we can't allow you to clap a stick-on bandage over our hemorrage and shunt off. The next time you came back to check on how we were faring, you wouldn't find a puling world to come back to. We need the *Ark*, Tuf, and we need it permanently. We're prepared to use it. Ten years ago you said that biotech and ecology were not our areas of expertise, and you were right. Then. But times change. We're one of the most advanced worlds in human civilization, and for a decade we've been devoting most of our educational efforts to training ecologists and biotechs. My predecessors brought in top theorists from Avalon, Newholme, and a dozen other worlds. Brilliant people, geniuses. We even managed to lure some leading genetic wizards off Prometheus." She stroked her cat and smiled. "They worked with our cybertechs to produce Blackjack here. I described Dax to them and they worked from cell samples taken from Ingratitude."

"How appropriate," said Tuf.

"We're ready to use the *Ark*. No matter how capable you are, Tuf, you're only one puling man. We want to keep your seedship permanently in S'uthlamese orbit, with a full-time staff of two hundred top scientists and genetic technicians, so we can deal with the food crisis *daily*. This ship and its cell library and all the lost data in its computers represents our last, best hope, you can see that. Believe me, Tuf, I didn't give Ober orders to seize your ship without considering every other goddamned option I could think of. I knew you'd never sell, damn it. What choice did I have? We don't want to cheat you. You would have been paid a fair price, I'd have insisted."

"This assumes I remained alive after the seizure," pointed out Tuf. "A doubtful proposition at best."

"You're alive now, and I'll still buy the damned ship. You could stay aboard, work with our people. I'm prepared to offer you lifetime employment, name your own salary, anything you want. You want to keep that eleven million standards? It's yours. You want us to rename the puling planet in your honor? Say the word, and we'll do it."

"Planet S'uthlam or Planet Tuf by any name would be as overcrowded," Haviland Tuf replied. "Should I agree to this proposed purchase, undoubtedly it is your intent to use the *Ark* only in these efforts to increase your caloric productivity and thus feed your starving people."

"Of course," said Tolly Mune.

Tuf's face was blank and serene. "I am pleased to learn that it has never occured to you or to any of your asso-

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ciates upon the High Council that the *Ark* might be employed in its original capacity as an instrument of biological warfare. Sadly, I have lost this refreshing innocence, and find myself prey to uncharitable and cynical visions of the *Ark* being used to wreak ecological havoc upon Vandeen, Skyrmir, Jazbo and the other allied homeworlds, even to the point of genocide, thereby preparing those planets for mass colonization, which I seem to recall is the population policy advocated by your troublesome expansionist faction."

"That's quite a goddamned implication," snapped Tolly Mune. "Life is sacred to the S'uthlamese, Tuf."

"Indeed. Yet, poisonous cynic that I am, I cannot help but suspect that ultimately the S'uthlamese may decide that some lives are more sacred than others."

"You know me, Tuf," she said, her tone crisp and chilly. "I would never allow anything like that."

"And if any such plan were enacted over your objections, I have no doubt that your letter of resignation would be quite sternly worded," Tuf said flatly. "I find this insufficiently reassuring, and have a hunch, yes, a hunch, that the allies might share my sentiments on this point."

Tolly Mune chucked Blackjack under the chin. The cat began to growl deep in his throat. Both of them stared at Tuf. "Tuf," she said, "millions of lives are at stake, maybe *billions*. There are things I could show you that would curl your hair. If you had any puling hair, that is."

"As I do not, this is obvious hyperbole," said Tuf.

"If you'd consent to shuttle in to Spiderhome, we could take the elevators downstairs to the surface of S'uthlam—"

"I think not. It would seem to me to be conspicuously unwise to leave the *Ark* empty and undefended, as it were, in the light of the climate of belligerence and distrust that presently festers upon S'uthlam. Moreover, though you may think me arbitrary and over-fastidious, with the passage of years I find I have lost whatever small degree of tolerance I once had for swarming crowds, cacophony, rude stares, unwelcome hands, watery beer, and minuscule portions of tasteless food. As I recall, these are the principle delights to be found upon the surface of S'uthlam."

"I don't want to threaten you, Tuf—"

"Nonetheless, you are about to."

"You will not be allowed to depart the system. I'm afraid. Don't try to hoodwink me like you did Ober. That business with the bomb is a goddamned fabrication and we both know it."

"You have found me out," Tuf said expressionlessly.

Blackjack hissed at him.

Tolly Mune looked down at the big cat, startled. "It's *not?*" she said in horror. "Oh, damn it to hell."

Tuf engaged the silver-gray feline in a silent staring contest. Neither of them blinked.

"It doesn't matter," Tolly Mune said. "You're here to stay, Tuf, resign yourself to it. Our new ships *can* destroy you, and they will if you try to pull out."

"Indeed," said Tuf. "And for my part, I will destroy the cell library if you attempt to board the *Ark*. It appears we have arrived at a stalemate. Fortunately,

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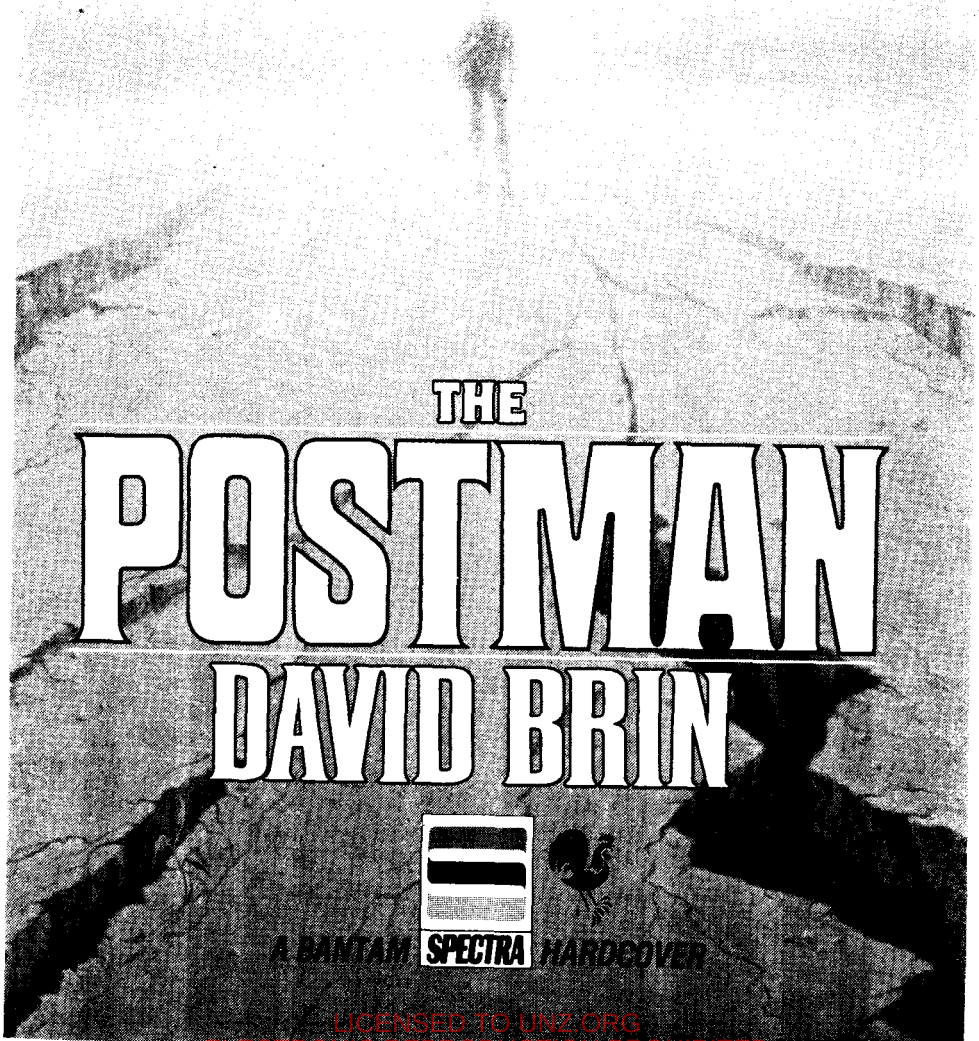

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it need not be of long duration. S'uthlam has never been far from my thoughts as I voyaged hither and yon across starry space, and during the periods when I was not professionally engaged, I have engaged myself in methodical research in order to devise a true, just, and permanent solution to your difficulties."

Blackjack sat down and began to purr. "You have?" Tolly Mune said dubiously.

"Twice the S'uthlamese have looked to me for a miraculous salvation from the consequences of their own reproductive folly and the rigidity of their religious beliefs," Tuf said. "Twice I have been called upon to multiply the loaves and fishes. Yet it occured to me recently, while engrossed in a study of that book which is the chief repository of the ancient myths from which that anecdote is drawn, that I was being asked to perform the wrong miracle. Mere multiplication is an inadequate reply to an on-going geometric progression, and loaves and fishes, however plentiful and tasty, must in the final analysis be found insufficient to your needs."

"What the hell are you talking about?" Tolly Mune demanded.

"This time," Tuf said, "I offer you a lasting answer."

"What?"

"Manna," said Tuf.

"Manna," said Tolly Mune.

"A truly miraculous foodstuff," said Haviland Tuf. "The details need not concern you. I will reveal all at the proper time."

The First Councillor and her cat looked at him suspiciously. "The proper time? And when will it be the proper puling time?"

"When my conditions have been met," Tuf said.

"What conditions?"

"First," said Tuf, "as the prospect of living out the rest of my life in orbit about S'uthlam is one I find unappealing, it must be agreed that I am free to go after my labors here are completed."

"I can't agree to that," Tolly Mune said, "and if I did the High Council would vote me out of office in a puling second."

"Secondly," Tuf continued, "this war must be terminated. I fear I will be unable to concentrate properly on my work when there is every likelihood of a major space battle breaking out around me at any moment. I am easily distracted by exploding starships, webs of laser fire, and the screams of dying men. Moreover, I see little point in exerting great efforts to make the S'uthlamese ecology balanced and functional once more when the allied fleets threaten to deposit plasma bombs all over my handiwork, and thereby undo my small achievements."

"I'd end this war if I could," Tolly Mune said. "It isn't that damned easy, Tuf. I'm afraid what you ask is impossible."

"If not a permanent peace, then perhaps at least a small cessation in hostilities," Tuf said. "You might send an embassy to the allied forces and petition for a short armistice."

"That might be possible," Tolly Mune said tentatively. "But why?" Blackjack gave an uneasy meow. "You're plotting something, damn it."

"Your salvation," Tuf admitted.

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"Pardon me if I deign to interfere with your diligent joint efforts to encourage mutation through radioactivity."

"We're defending ourselves! We didn't want this war!"

"Excellent. In that case, a short delay will not unduly inconvenience you."

"The allies will never buy it. Neither will the High Council."

"Regrettable," said Tuf. "Perhaps we ought give S'uthlam some time to consider. In twelve years, the surviving S'uthlamese might have more flexible attitudes."

Tolly Mune reached out and scratched Blackjack behind the ears. Blackjack stared at Tuf, and after a minute uttered a small, strange peeping sound. When the First Councilor stood abruptly, the huge silver-gray cat leapt nimbly from her lap. "You win, Tuf," she said. "Lead me to a comm set and I'll set the damned thing up. You're prepared to wait forever and I'm not. People are dying every moment we delay." Her voice was hard, but inside, for the first time in months, Tolly Mune felt hope mingled with her unease. Maybe he *could* end the war and solve the crisis. Maybe there was really a chance. But she let no hint of that creep into her tone. She pointed. "But don't think you're going to get away with anything funny."

"Alas," said Haviland Tuf, "humor has never been my forte."

"I've got Blackjack, remember. Dax is too freaked out and intimidated to do you any good, and Jac will let me know the instant you start thinking about treachery."

"Always my best intentions are met with suspicion."

"Blackjack and me, we're your puling shadows, Tuf. I'm not leaving this ship until things are settled, and I'm going to look hard at everything you do."

"Indeed," said Tuf.

"Just keep a few damned things in mind," Tolly Mune said. "I'm First Councilor now. Not Josen Rael. Not Cregor Blaxon. Me. Back when I was Portmaster, they liked to call me the Steel Widow. You might pass an hour or two pondering how and why I got that puling name."

"I shall indeed," said Tuf, rising. "Is there anything else you would like me to recall, madam?"

"Just one thing," she said. "A scene from that *Tuf and Mune* vidshow."

"I have striven diligently to put that unfortunate fiction out of my memory," Tuf said. "Which particular of it would you force me to recall?"

"The scene where the cat rips the security man to shreds," Tolly Mune said, with a small, sweet smile. Blackjack rubbed up against her knee, turned his smoky gaze up at Tuf, and rumbled deep in his massive body.

It took almost ten days to arrange the armistice, and another three for the allied ambassadors to make their way to S'uthlam. Tolly Mune spent the time haunting the *Ark*, two steps and a hasty thought behind Tuf, questioning everything he did, peering over his shoulder when he labored at his console, riding by his side when he made the rounds of his cloning vats, helping him feed his cats (and keep a hostile Dax away from Blackjack). He attempted nothing overtly suspicious.

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Dozens of calls came through for her daily; she set up an office in the communications room, so she would never be far from Tuf, and handled the problems that could not wait.

Hundreds of calls came through daily for Haviland Tuf. He instructed his computer to refuse all of them.

When the day came, the envoys emerged from their long, luxurious diplomatic shuttle and stood gazing about at the *Ark*'s cavernous landing deck and fleet of derelict starships. They were a colorful and diverse lot. The woman from Jazbo had waist-long blue-black hair that shone with scented iridescent oils; her cheeks were covered with the intricate scars of rank. Skrymir sent a stocky man with a square red face and hair the color of mountain ice. His eyes were a crystalline blue that matched the color of his scaled metal shirt. The envoy from the Azure Triune moved within a haze of holographic projections, a dim, fractured, shifting shape that spoke in an echoey whisper. Roggandor's cyborg ambassador was as broad as he was tall, made in equal parts of stainless duralloy, dark plasteel, and mottled red-black flesh. A slight, delicate-looking woman in transparent pastel silks represented Henry's World; she had a boyish adolescent body and ageless scarlet eyes. The allied party was led by a large, plump, opulently dressed man from Vandeen. His skin, wrinkled by age, was the color of copper; his long hair fell past his shoulders in thin, delicate braids.

Haviland Tuf, driving a segmented vehicle that glided across the deck like a snake on wheels, stopped directly in front of the ambassadors. The Vandeeni stepped forward beaming, reached up and pinched his own full cheek very vigorously, and bowed. "I would offer my hand, but I recall your opinion of that custom," he said. "Do you remember me, fly?"

Haviland Tuf blinked. "I have some vague recollection of encountering you upon the train to the surface of S'uthlam some ten years ago," he said.

"Ratch Norren," the man said. "I'm not what you call a regular diplomat, but the Board of Coordinators figured they'd send somebody who'd met you, and knew the suthies too."

"That's an offensive term, Norren," Tolly Mune said bluntly.

"You're an offensive bunch," Ratch Norren replied.

"And dangerous," whispered the envoy from the Azure Triune, from the center of his holographic fog.

"You're the puling aggressors," Tolly Mune started.

"Defensive aggression," boomed the cyborg from Roggandor.

"We recall the last war," said the Jazboite. "This time we decline to wait until your damnable evolutionists burst forth and try to colonize our worlds again."

"We have no such plans," Tolly Mune said.

"*You* don't, spinneret," Ratch Norren said. "But look me in the optics here and tell me your expansionists don't have wet dreams about breeding all over Vandeen."

"And Skrymir."

"Roggandor wants no part of your cast-off human detritus."

"You will never take the Azure Triune."

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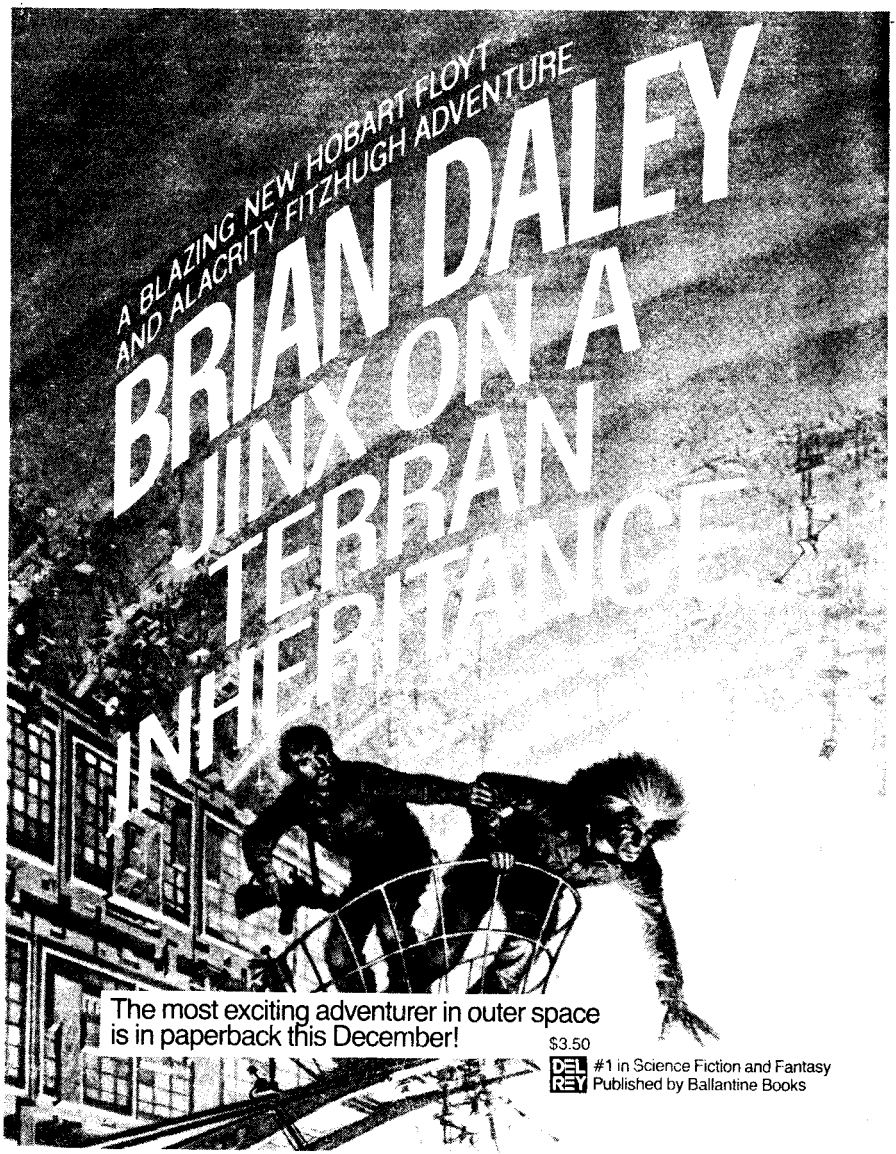
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"Who the hell would *want* the puling Azure Triune?" snapped Tolly Mune. Blackjack purred approval.

"This glimpse into the inner working of high interstellar diplomacy has been most elucidating," Haviland Tuf announced. "Nonetheless, I sense that more pressing business awaits. If the envoys would be so cooperative as to board my vehicle, we might proceed onward to our conference."

Still muttering among themselves, the allied ambassadors did as Tuf bid them. Fully loaded, the vehicle set out across the landing deck, weaving a path between the myriad abandoned starships. An airlock round and dark as the mouth of a tunnel or the jaws of some insatiable beast opened at their approach and swallowed them. They entered and stopped; the lock closed behind them, engulfing the party in darkness. Tuf ignored the whispered complaints. Around them came a screeching metallic noise; the floor began to descend. When they had dropped at least two decks, another door opened in front of them. Tuf turned on his headlamps and they drove out into a pitch-black corridor.

They drove through a maze of dark, chilly corridors, past countless closed doors, following a dim indigo trace that flitted before them, a ghost embedded in the dusty floor. The only light was the beam from the train's headlamps, and the faint glow of the instrument panel in front of Tuf. At first the envoys bantered among themselves, but the black depths of the *Ark* were oppressive and claustrophic, and one by one the members of the delegation fell silent. Blackjack began to knead Tolly Mune's knees rhythmically with his claws.

After a long time rolling through dust, darkness, and silence, the train approached a towering pair of double doors that hissed open ominously at their approach, and closed with a loud clang of finality behind them. Within, the air was moist and hot. Haviland Tuf stopped, and turned off the headlamps. Total darkness enveloped them.

"Where *are* we?" Tolly Mune demanded. Her voice rang off some distant ceiling, although the echo seemed strangely muffled. Though black as a pit, the room was obviously cavernous. Blackjack hissed uneasily, sniffed the air, and made a tiny, uncertain mewing sound.

She heard footsteps, and a small light flicked on two meters away; Tuf was bent over an instrument console, watching a monitor panel. He pressed one key in a luminescent keyboard, and turned. A padded wingback floater chair came whispering out of the warm darkness. Tuf climbed into it like a king ascending a throne, and touched a control on the arm. The chair lit up with a faint violet phosphorescence. "Kindly follow," Tuf announced. The floater swiveled in the air and began to drift off.

"Puling hell," Tolly Mune muttered. She climbed out of her seat hastily, cradling Blackjack, and scrambled after Tuf's retreating throne. The allied ambassadors followed en masse, whining and complaining every step of the way. She could hear the cyborg's massive footsteps behind her. Tuf's floater was the only spot of light in an enveloping sea of darkness. As she rushed after him, she stepped on something.

The sudden feline yowl made her recoil, bumping into the cyborg's armored

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chest. Confused, Tolly Mune knelt and reached out a tentative hand, holding Blackjack awkwardly in the crook of her arm; her fingers brushed soft fur. The cat rubbed up against her furiously, purring loudly. She could barely make out its shape; a small shorthair, hardly more than a kitten. It rolled over so she could scratch its belly. The Jazboite almost stumbled over her as she knelt there. And then suddenly Blackjack had leaped free and was sniffing around the new cat. It returned the favor briefly, then whirled, and in a blink it had vanished into the darkness. Blackjack hesitated, then howled and bounded after it. "Goddamn it," Tolly Mune shouted. "Goddamn it, Jac, get your puling ass back here!" Her voice echoed, but her cat did not return. The rest of the party was growing more distant. Tolly Mune swore loudly and hurried to catch up.

An island of light appeared ahead of her. When she arrived, the others were settling into seats arrayed along one side of a long metal table. Haviland Tuf, in the throne-like floater, was on the other side of the table, his face expressionless, his white hands folded atop his stomach.

Dax was stalking back and forth across his shoulders, purring.

Tolly Mune stopped, glared, swore. "Damn you to hell," she said to Tuf. She turned around. "*Blackjack!*" she screamed at the top of her lungs. The echoes seemed swaddled in thick cloth, curiously indistinct. "*Jac!*" Nothing.

"I hope we have not come all this way simply to listen to the First Councilor of S'uthlam practice animal calls," the envoy from Skrymir said.

"Indeed not," said Tuf. "First Councilor Mune, if you will kindly take your seat, we may proceed at once."

She scowled, and sank down into the only vacant chair. "Where the hell is Blackjack?"

"I can hardly venture an opinion on that subject," said Tuf flatly. "He is, after all, your cat."

"He ran off after one of yours," Tolly Mune snapped.

"Indeed," said Tuf. "Interesting. At the moment it so happens that I have a young female who has recently gone into heat. Perhaps that explains his actions. I have no doubt that he remains quite safe, First Councilor."

"I want him back for this puling conference!" she said.

"Alas," said Tuf, "the *Ark* is a large ship and they might be sporting in any of a thousand places, and in any case to interfere with their sexual congress would be unconscionably anti-life by S'uthlamese standards. I would hesitate to do such violence to your cultural mores. Morever, you have stressed to me repeatedly that time is of the essence, as many human lives are at stake. Ergo I think it best we proceed with all due haste."

Tuf moved his hand slightly, touched a control. A section of the long table sank out of sight. A moment later, a plant rose from within, directly in front of Tolly Mune. "Behold," said Tuf. "Manna."

It grew from a low bedding pan, a tangle of pale green vines almost a meter high, a living gordian knot, tendrils weaving back and forth on themselves and edging over the lip of the container. All along the vines were thick clusters of leaves, as tiny as fingernails, their

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waxy green surface shot through with a delicate tracery of black veins. Tolly Mune reached out and touched the nearest leaf, and discovered that its underside was covered with a dusting of fine powder that came off on the tips of her fingers. Between the clusters of leaves, the branching vines were swollen with clusters of fat white carbuncles, larger and more pustulant-looking in toward the central tangle of growth. She saw one pap, half concealed under a canopy of leaves, that had grown big as a man's hand.

"Ugly looking weed," opined Ratch Norren.

"I fail to understand why it was necessary to declare an armistice and travel all this way to behold some festering hothouse monstrosity," said the man from Skrymir.

"The Azure Triune grows impatient," whispered their envoy.

"There's some puling motive in this madness," Tolly Mune said to Tuf. "Get on with it. Manna, you said. So what?"

"It will feed the S'uthlamese," said Tuf. Dax was purring.

"For how many days?" asked the woman from Henry's World, in a sweet voice that dripped sarcasm.

"First Councilor, if you would be so kind as to break off one of the larger paps, you will find the flesh delectably succulent and quite nutritious," Tuf said.

Tolly Mune leaned forward grimacing. She wrapped her fingers around the largest fruit. It felt soft and pulpy to her touch. She tugged, and it came off the vine easily. She broke it apart with her fingers. The flesh tore like fresh bread. Deep within its secret center was a sac of dark, viscous liquid that flowed with seductive slowness. A marvelous smell filled her nostrils. She began to salivate. She hesitated for an instant, but it smelled too good. Quickly, she took a bite. She chewed, swallowed, took another bite, another. In four bites it was all gone, and she was licking the stickiness off her fingers.

"Milkbread," she said, "and honey. Rich, but tasty."

"Nor will the taste pall," Tuf announced. "The secretions in the heart of each palp are mildly narcotic, and individual with each specimen of the manna plant, its distinct and subtle flavors a factor of the chemical composition of the soil in which the plant has taken root and the genetic heritage of the plant itself. The range of tastes is quite broad, and can be further expanded through cross-breeding."

"Hold on," Ratch Norren said loudly. He tugged at his cheek and frowned. "So this damned bread-and-honey fruit tastes just swell, sure, sure. So what? So the suthies have something tasty to snack on after they make some more little suthies. A nice treat to relieve the tedium of conquering Vandeen and breeding all over it. Pardon, folks, but Ratch don't feel like applauding right now."

Tolly Mune frowned. "He's rude," she said, "but he's right. You've given us miracle plants before, Tuf. Omnigrain, remember? Neptune's shawl. Jersee-pods. How's manna going to be any different?"

"In several respects," said Haviland Tuf. "Firstly, my previous efforts have been directed at making your ecology

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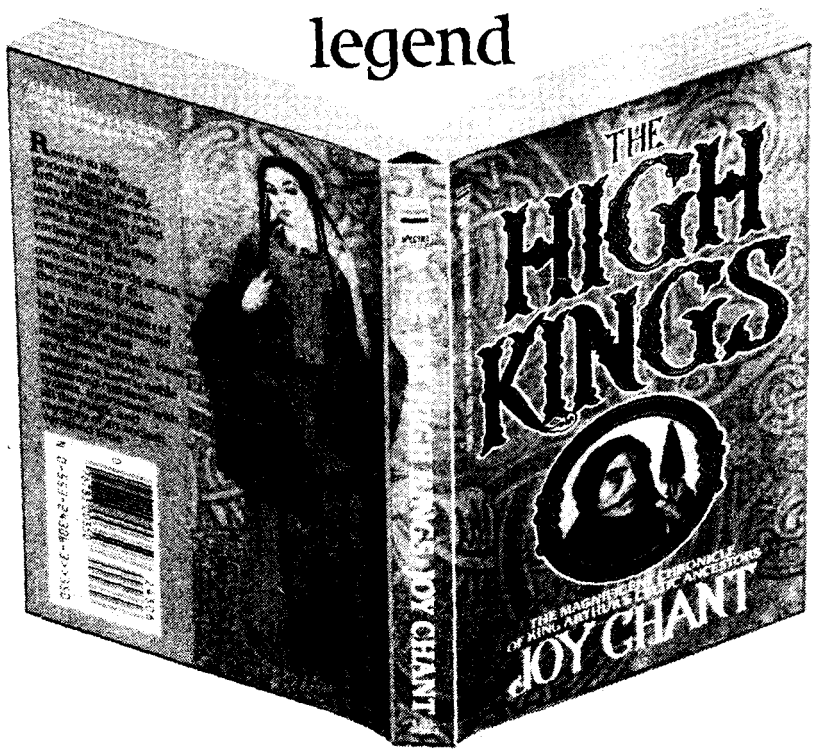

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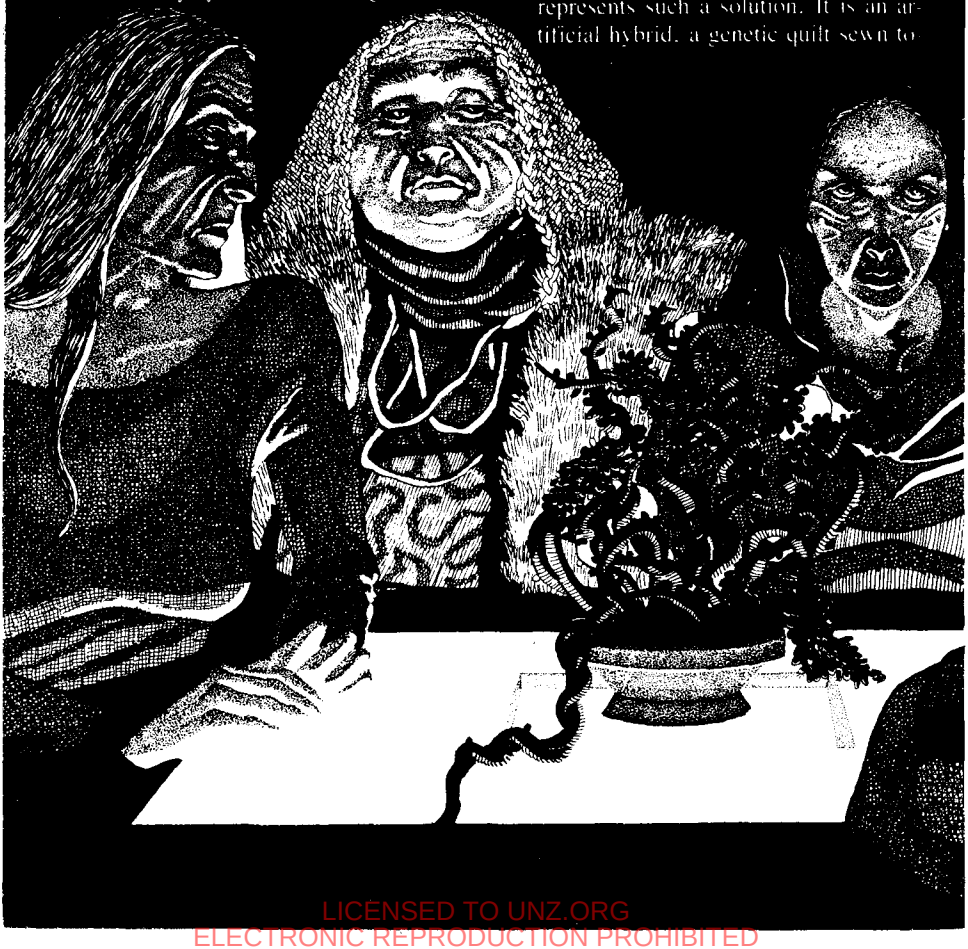
more efficient, to increasing the caloric output from the finite areas of S'uthlam given over to agriculture, to getting more from less, as it were. Unfortunately, I did not adequately account for the perversity of the human species. As you yourself have reported, the S'uthlamese food chain is still far from maximum efficiency. Though you have meatbeasts to provide protein, you persist in raising and feeding wasteful herd animals, simply because some of your wealthier carnivores prefer the taste of such flesh to a slice of a meatbeast. Similarly, you continue to grow omnigrain and nano-wheat for reasons of flavor and culinary variety, where jerseepods would yield you more calories per square meter. Succinctly put, the S'uthlamese still persist in choosing hedonism over rationality. So be it. Manna's addictive properties and flavors are unique. Once the S'uthlamese have eaten of it, you will encounter no resistance on the grounds of taste."

"Maybe," Tolly Mune said doubtfully, "but still—"

"Secondmost," Tut continued, "manna grows swiftly. Extreme difficulties demand extreme solutions. Manna represents such a solution. It is an artificial hybrid, a genetic quilt sewn to-



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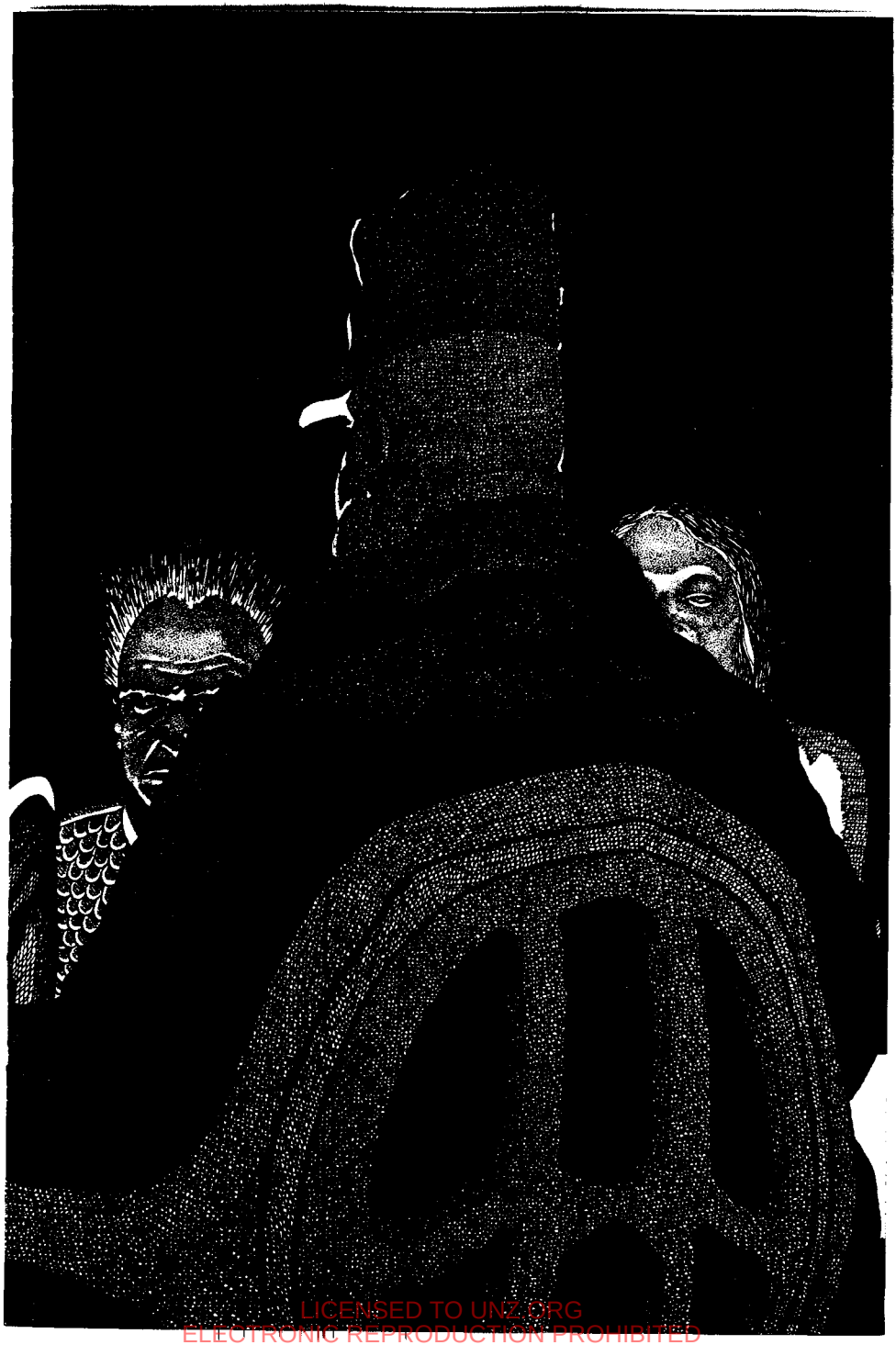

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gether with DNA strands from a dozen worlds, its natural ancestors including the breadbush of Hafeer, insinuating nightweed from Noctos, Gulliverian sugarsacs, and a specially enhanced variety of kudzu from Old Earth itself. You will find it hardy and fast-spreading, in need of scant care, and capable of transforming an eco-system with astonishing swiftness."

"How astonishing?" Tolly Mune demanded bluntly.

Tuf's finger moved slightly, pressed down on a glowing key set within the arm of his floater. Dax purred.

The lights came on.

Tolly Mune blinked in the sudden glare.

They sat in the center of a huge circular room a good half-kilometer across, its domed ceiling curving a hundred meters above their heads. Behind Tuf a dozen towering plasteel eco-spheres emerged from the walls, each open at the top and full of soil. A dozen different types of soil, representing a dozen different habitats; powdery white sand, rich black loam, thick red clay, blue crystalline gravel, gray-green swamp mud, tundra frozen hard as ice. From each eco-sphere a manna plant grew.

And grew.

And grew.

And grew.

The central plants were five meters high; their questing vines had long since crawled over the tops of their habitats. The tendrils snaked halfway across the floor, to within a half-meter of Tuf, winding together, branching and rebranching. Manna vines covered the walls three-quarters of the way around the room. Manna vines clung precariously to the smooth white plasteel ceiling, half-eclipsing the light panels, so the illumination drifted down to the floor in shadow patterns of incredible intricacy. The filtered light seemed greenish. Everywhere the manna fruit bloomed, white pods the size of a man's head drooping from the vines overhead and pushing through the tangle of growth. As they watched, one pod fell to the floor with a soft liquid *plop*. Now she understood why the echoes had sounded so curiously muted.

"These particular specimens," Haviland Tuf announced in an expressionless voice, "were begun from spores some fourteen days ago, shortly before my first meeting with the estimable First Councilor. A single spore in each habitat was all that was required; I have neither watered nor fertilized in the interim. Had I done so, the plants would not be nearly so small and stunted as these poor examples you see before you."

Tolly Mune got to her feet. She had lived for years in zero-g, so it was a strain to stand under full gravity, but there was a tightness in her chest and a bad taste deep in the back of her mouth, and she felt she had to grasp for every psychological advantage, even one as small and obvious as standing when the rest of them were seated. Tuf had taken her breath away with his manna-from-the-hat trick, she was outnumbered, and Blackjack was life-knew-where while Dax sat by Tuf's ear, purring complacently and regarding her with large golden eyes that saw right through every puling artifice. "Very

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impressive," she said.

"I am pleased you think so," Tuf said, stroking Dax.

"Exactly what are you proposing?"

"My proposition is thus: we will immediately commence seeding S'uthlam with manna. Delivery may be effected through use of the *Ark*'s six shuttlecraft. I have already taken the liberty of stocking the shuttle bays with explosive airpods, each containing manna spores. Released into the atmosphere in a certain predetermined pattern that I have devised, the spores will ride upon the winds and distribute themselves about S'uthlam. Growth will commence immediately. No further effort will be required from the S'uthlamese but that they pick and eat." His long still face turned away from Tolly Mune, toward the envoys from the allied worlds. "Sirs," he said, "I suspect that you are presently wondering as to your own part in this."

Ratch Norren pinched his cheek and spoke for them all. "Right," he said. He looked around uneasily. "Comes back to what I said before. So this weed feeds all the suthies, so what, that's nothing to us."

"I would think the consequences obvious," said Tuf. "S'uthlam is a threat to the allied worlds only because the S'uthlamese population is perpetually threatening to outstrip the S'uthlamese food supply. This renders S'uthlam, an otherwise peaceful and civilized world, inherently unstable. While the technocrats remained in power and kept the equation in an approximate balance, S'uthlam has been the most cooperative of neighbors, but this balancing, however virtuoso, must eventually fail, and with that failure inevitably the expansionists rise to power and the S'uthlamese become dangerous aggressors."

"I'm no puling expansionist!" Tolly Mune said hotly.

"Such was not my implication," said Tuf. "Neither are you First Councilor for life, despite your obvious qualifications. War is already at hand, albeit a defensive war. When you fall, should an expansionist replace you, the struggle will become a war of aggression. In

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circumstances such as those the S'uthlamese have created for themselves, war is as utterly certain as famine, and no single leader, however well-intentioned and competent, can possibly avoid it."

"Exactly," the boyish young woman from Henry's World said in a precise voice. Her eyes had a shrewdness in them that belied her adolescent body. "And if war is inevitable, we had just as well fight it out now, and solve the problem once and for all."

"The Azure Triune must agree," came a whispered second.

"True," said Tuf, "granting your premise that war must come inevitably."

"You just told us the bloody expansionists would start a war inevitably, Tuffer," Ratch Norren complained.

Tuf soothed the black tomcat with a large white hand. "Incorrect, sir. My statements as to the inevitability of war and famine were predicated upon the collapse of the unstable balance between the S'uthlamese population and S'uthlamese food supplies. Should this tenuous equation be brought back into alignment, S'uthlam is no threat whatsoever to the other worlds in this sector. Under these conditions, war is both unnecessary and morally unconscionable, I would think."

"And you avow this pestilential popweed of yours will be the thing to do the job?" the woman from Jazbo said contemptuously.

"Indeed," said Tuf.

The ambassador from Skrymir shook his head. "No. A valid effort, Tuf, and I respect your dedication, but I think not. I speak for all the allies when I say that we cannot put our faith in yet another breakthrough. S'uthlam has had its greenings and flowerings and blossomings and ecological revolutions before. In the end, nothing changes. We must conclude this matter once and for all."

"Far be it from me to interfere with your suicidal folly," said Tuf. He scratched Dax behind an ear.

"Suicidal folly?" Ratch Norren said. "What's that mean?"

Tolly Mune had been listening to it all. She turned to face the allies. "That means you lose, Norren," she said.

The envoys laughed: a polite chuckle from the Henry, a guffaw from the Jazboite, a booming thunder from the cyborg. "The arrogance of the S'uthlamese never ceases to amaze me," said the man from Skrymir. "Don't be misled by this temporary stalemate, First Councilor. We are six worlds united as one. Even with your new flotilla, we outnumber you and outgun you. We defeated you once before, you might recall. We'll do it again."

"You will not," said Haviland Tuf.

As one, the envoys looked at him.

"In recent days I have taken the liberty of doing some small research. Certain facts have become obvious. Firstly, the last local war was fought centuries ago. S'uthlam suffered an undeniable defeat, yet the allies are still recovering from their victory. S'uthlam, however, with its greater population base and more voracious technology, has long since left all effects of that struggle behind. Meanwhile, S'uthlamese science has advanced as swiftly as manna, if I may be permitted a colorful metaphor, while the allied worlds owe what small

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advances they claim to knowledge and techniques imported from S'uthlam. Undeniably the combined allied fleets are significantly more numerous than the S'uthlamese Planetary Defense Flotilla, yet most of the allied armada is functionally obsolete in the face of the sophisticated weaponry and technology embodied in the new S'uthlamese ships. Moreover, it is grossly inaccurate to say the allies outnumber S'uthlam in any real sense. You comprise six worlds against one, correct, but the combined population of Vandeen, Henry's World, Jazbo, Roggandor, Skrymir, and the Azure Triune totals scarcely four billion, less than one-tenth the population of S'uthlam alone."

"One-tenth?" the Jazboite croaked.

"Indeed," said Tuf. "At the moment, a delicate martial balance holds sway; the allied ships are more numerous, the S'uthlamese flotilla more advanced and better armed. This is obviously impermanent, as the S'uthlamese technology enables them to produce war fleets far more swiftly than any of the allies. I would venture to guess that just such an effort is currently underway." Tuf looked at Tolly Mune.

"No," she said.

But Dax was looking at her too. "Yes," Tuf announced to the envoys. He raised a single finger. "Therefore, I propose you take advantage of this present rough equality to capitalize on the opportunity I am offering you to solve the problem posed by S'uthlam without resort to nuclear bombardment and similar unpleasantries. Extend this armistice for one standard year, and allow me to seed S'uthlam with manna. At the end of that time, if you feel that S'uthlam still constitutes a threat to your homeworlds, feel free to resume hostilities."

"Neg, trader," the cyborg from Roggandor said heavily. "You are impossibly naive. Give them a year, you say, and let you do your tricks. How many new fleets will they build in a year?"

"We'll agree to a moratorium on new arms-building if your worlds will do the same," Tolly Mune said.

"So you say. I suppose we should trust you?" Ratch Norren sneered. "To hell with that. You suthies proved how trustworthy you were when you rearmed secretly, in express violation of the treaty. Talk about bad faith!"

"Oh, sure, you'd have preferred it if we were helpless when you came to occupy us. Puling hell, what a damned hypocrite!" Tolly Mune responded in disgust.

"It's too late for pacts," declared the Jazboite.

"You said it yourself, Tuf," the Skyrmirian said. "The longer we delay, the worse our situation becomes. Therefore we have no choice but an immediate all-out strike at S'uthlam itself. The odds will never get any better."

Dax hissed at him.

Haviland Tuf blinked, and folded his hands neatly on his stomach. "Perhaps you would reconsider if I appealed to your love of peace, your horror of war and destruction, and your common humanity?"

Ratch Norren made a contemptuous noise. One by one, the other members of the delegation looked away, demurring.

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"In that case," said Tuf, "you leave me no choice." He stood up.

The Vandeeni frowned. "Hey, where are you going?"

Tuf gave a ponderous shrug. "Most immediately to a sanitary facility," he replied, "and afterwards to my control chamber. Please accept my assurances that no personal animosity of any sort is intended toward any of you. Nonetheless it appears, unfortunately, that I must now go forth and destroy your respective worlds. Perhaps you would like to draw straws, to determine where I might best start."

The woman from Jazbo choked and sputtered.

Deep inside his haze of blurred holographs, the envoy from the Azure Triune cleared his throat, a sound as small and dry as an insect scuttling across a sheet of paper.

"You would not dare," boomed the cyborg from Roggandor.

The Skyrmirian folded his arms in a chilly silence.

"Ah," said Ratch Norren. "You. Ah. That is. You won't. Yes, but surely. Ah."

Tolly Mune laughed at them all. "Oh, he means it," she said, though she was no less astonished than the rest of them. "And he can do it, too, or the *Ark* can, rather. Commander Ober will be sure he gets an armed escort, too."

"There is no need for haste," the woman from Henry's World said in precise, measured tones. "Perhaps we might reconsider."

"Excellent," said Haviland Tuf. He sat back down. "We will proceed with all deliberate haste," he said. "A one year armistice will go into effect, as I have outlined, and I shall seed S'uthlam with manna immediately."

"Not so fast," Tolly Mune interjected. She felt giddy and triumphant; somehow the war had just ended, Tuf had done it, S'uthlam was safe for at least a year. But relief did not make her entirely lightheaded. "All this sounds fine, but we'll have to run some studies on this manna plant of yours before you start dropping spores all over S'uthlam. Our own biotechs and ecologists will want to examine the damn thing, and the High Council will want to run a few projections. A month ought to do. And of course Tuf, what I said before still goes—you're not just dumping your manna on us and leaving. You'll stay this time, for the duration of the armistice, and maybe longer, until we have a good idea of how this latest miracle of yours is going to work."

"Alas," said Tuf, "I fear I have pressing engagements elsewhere in the galaxy. A sojourn of a standard year or more is inconvenient and unacceptable, as is a delay of a month before my commencing my seeding program."

"Wait just a puling second!" Tolly Mune began. "You can't just—"

"I can indeed," said Tuf. He looked from her to the envoys, significantly, and then back again. "First Councilor Mune, allow me to point out the obvious. A rough balance of military force now exists between S'uthlam and its adversaries. The *Ark* is a formidable instrument of destruction, capable of wasting worlds. Just as it is possible for me to throw in with your forces and destroy any of the allied planets, so the

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converse is also within the realm of possibility."

Tolly Mune suddenly felt as though she'd been assaulted. Her mouth gaped open. "Are you . . . Tuf, are you threatening us? I don't believe it. Are you threatening to use the *Ark* against S'uthlam?"

"I am merely bringing certain possibilities to your attention," said Haviland Tuf, his voice as flat as ever.

Dax must have sensed her rage; he hissed. Tolly Mune stood helplessly, bewildered. Her hands balled into fists.

"I will charge no fee for my labors as mediator and ecological engineer," Tuf announced. "Yet I will require certain safeguards and concessions from both parties to our agreement. The allied worlds will furnish me with a bodyguard, so to speak; a small fleet of warships, sufficient in number and weaponry to stave off any attacks upon the *Ark* from the Planetary Defense Flotilla of S'uthlam and to escort me safely out of the system when my task here is done. The S'uthlamese, for their part, will agree to allow this allied fleet into their home system in order that my fears may be laid to rest. Should either side initiate hostilities during the period of the armistice, they will do so in full knowledge that this will surely provoke me to a most awful fit of wrath. I am not overly excitable, but when my anger is indeed aroused, I ofttimes frighten even myself. Once a standard year has passed, I shall be long departed and you may feel yourself free to resume your mutual slaughter, if you so choose. Yet it is my hope, and my prediction, that this time the steps I am initiating will prove so efficacious that none of you will feel compelled to resume hostilities." He stroked Dax's thick black fur, and the tomcat regarded each of them in turn with his huge golden eyes, seeing, weighing.

Tolly Mune felt cold all over. "You are imposing peace on us," she said.

"Albeit temporarily," said Tuf.

"And you are imposing this solution, whether we want it or not," she said.

Tuf looked at her, but did not reply.

"*Just who the goddamned puling hell do you think you are?*" she screamed at him, unleashing the fury that had been swelling inside her.

"I am Haviland Tuf," he said evenly, "and I have run out of patience with S'uthlam and the S'uthlamese, madam."

After the conference was over, Tuf drove the ambassadors back to their diplomatic shuttle, but Tolly Mune refused to go along.

For long hours, she roamed the *Ark* alone, cold, tired, yet relentless. She called out as she went. "Blackjack!" she shouted, from the top of the moving staircases. "Here, Blacky, here," she sang as she strode through the corridors. "Jac!" she cried when she heard a noise around a corner, but it was only a door opening or closing, the whirr of some machine repairing itself, or perhaps the scurrying of some stranger cat, some familiar of Tuf's. "Blaaaaack-jaaaaaaaaack!" she shouted at intersections where a dozen corridors crossed, and her voice boomed and rattled off his distant walls and echoed back at her.

But she did not find her cat.

Finally her wanderings took her up several decks, and she emerged in the dimly-lit central shaft that cored the vast

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seedship: a towering, echoing immensity thirty kilometers long, its ceiling lost in shadows, its wall lined by cloning vats large and small. She chose a direction at random and walked, and walked, and walked, calling out Blackjack's name.

From somewhere ahead she heard a small, uncertain meow.

"Blackjack?" she called. "Where are you?"

Again she heard it. Up there, ahead. She took two hurried steps forward, and began to run.

Haviland Tuf stepped out from beneath the shadow of a plasteel tank twenty meters high; Blackjack was cradled in his arms, purring.

Tolly Mune stopped dead.

"I have located your cat," said Tuf.

"I can see that," she said coldly.

Tuf handed the huge gray tomcat to her gently, his hands brushing against her arms as he made the transfer. "You will find him none the worse for his wanderings," Tuf declared. "I took the liberty of giving him a full medi-probe, to ascertain that he had suffered no misadventures, and determined that he is in the best of health. Imagine my surprise when I also chanced to discover that all the various bionic augmentations of which you informed me have somehow mysteriously and inexplicably vanished. I am at a loss to explain it."

Tolly Mune hugged the cat to her chest. "So I lied," she said. "He's telepathic, like Dax. Maybe not as powerful. But that's all. I couldn't risk his fighting with Dax. Maybe he'd have won, maybe not. I didn't want him cowed." She grimaced. "So you got him laid instead. Where's he been?"

"Having left the manna chamber by a secondary entrance in pursuit of the object of his affections, he subsequently discovered that the doors were programmed to deny him readmittance. Therefore he has spent the intervening hours roaming through the *Ark* and making the acquaintance of various other feline members of my ship's company."

"How many cats do you have?" she asked.

"Fewer than you," Tuf said, "yet this is not entirely unanticipated. You are S'uthlamese, after all."

Blackjack was warm and reassuring in her arms, and all at once Tolly Mune was struck by the fact that Dax was no longer in evidence. She had the edge again. She scratched Jac behind an ear; he turned his limpid silver-gray eyes upon Tuf. "You don't fool me," she said.

"I thought it unlikely that I could," Tuf admitted.

"The manna," she said. "It's some kind of a trap, isn't it? You fed us a batch of lies, admit it."

"Everything I have told you of the manna is the truth."

Blackjack uttered a peep. "The truth," said Tolly Mune, "oh, the puling truth. That means there are things you haven't told us about the manna."

"The universe abounds in knowledge. Ultimately there are more facts to be known than humans to know them, an astonishing realization considering that populous S'uthlam is included in humanity's tally. I could scarcely hope to tell you everything concerning any subject, however limited."

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She gave a snort. "What are you going to do to us, Tuf?"

"I am going to resolve your food crisis," he said, his voice as flat and cold as still water, and as full of secret depths.

"Blackjack's purring," she said, "so you're telling the truth. But how, Tuf, *how?*"

"The manna is my instrument."

"Bladder bloat," she said. "I don't give a puling wart how tasty and addictive the manna fruit is, or how fast the damned things grow, no plant is going to solve our population crisis. You've tried all that. We've been round those coordinates with omni-grain and the pods and the wind-riders and the mushroom farms. You're holding something back. Come on, piss it out."

Haviland Tuf regarded her in silence for well over a minute. His eyes locked with hers, and it seemed briefly as though he were looking deep inside her, as if Tuf too were a mind-reader.

Perhaps it was something else he read; finally he answered. "Once the plant has been sown, it will never be entirely eradicated, regardless of how diligently you may attempt to do so. It will spread with inexorable rapidity, within certain parameters of climate. Manna will not thrive everywhere; frost kills it, and cold is inimicable to its growth, but it shall indeed spread to cover the tropical and subtropical regions of S'uthlam, and that will be enough."

"Enough for *what?*"

"The manna fruit is extremely nutrious. During the first few years, it will do much to relieve the pressures of your present caloric shortfalls and thereby improve conditions upon S'uthlam. Eventually, having exhausted the soil in its vigorous spread, the plants will expire and decay, and you will of necessity be forced to employ crop rotation for a few years before those particular plots are capable of sustaining manna once again. Yet meanwhile the manna shall have completed its real work, First Councilor Mune. The dust that collects upon the underside of each leaf is in actuality a symbiotic microorganism, vital to manna pollination, yet with certain other properties. Borne upon the wind, carried by vermin and human alike, it shall touch every cranny and nook upon the surface of your globe."

"The dust," she said. She had gotten it on her fingertips when she touched the manna plant . . .

Blackjack's growl was so low she felt it more than heard it.

Haviland Tuf folded his hands. "One might consider manna dust as an organic prophylactic of sorts," he said. "Your biotechs will discover that it interferes powerfully, and permanently, with libido in the human male and fertility in the human female. The mechanisms need not concern you."

Tolly Mune stared at him, opened her mouth, closed it, blinked to hold back tears. Tears of despair, tears of rage? She could not say. Not tears of joy. She would not let them be tears of joy. "Deferred genocide," she said, forcing out the words. Her voice was hoarse and raw.

"Scarcely," Tuf said. "Some of your S'uthlamese will display a natural immunity to the effects of the dust. My projections indicate that somewhere between point oh-seven and point one-one

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per cent of your base population will be unaffected. They will reproduce, of course, and thus the immunity will be passed on and grow more prevalent in successive generations. Yet a population implosion of considerable magnitude will commence upon S'uthlam this year, as the birth curve ceases its upward thrust and starts a precipitious descent."

"You have no right," said Tolly Mune slowly.

"The nature of the S'uthlamese problem is such so as to admit but one lasting and effectual solution," Tuf said, "as I have told you from the very beginning."

"Maybe," she said. "But so what? What about freedom, Tuf? What about individual choice? My people may be selfish and short-sighted fools, but they're still *people*. Just like you. They have the right to decide if they're going to have children, and how many children. Who the hell gave you the authority to make that decision for them? Who the hell told you to go ahead and sterilize our world?" She was growing angrier with every word. "You're no better than we are, you're only human, Tuf. A puling peculiar human, I'll give you that, but only human, no more and no less. What gives you the goddamned *right* to play god with our world and our lives?"

"The *Ark*," Haviland Tuf said, simply.

Blackjack squirmed in her arms, suddenly restless, uneasy. Tolly Mune let him jump to the ground, never taking her eyes off Tuf's blank white face. Suddenly she wanted to strike him, hurt him, wound that mask of indifference and complacency, mark him. "I warned you, Tuf," she said. "Power corrupts and absolute power corrupts absolutely, remember?"

"My memory is unimpaired."

"Too bad I can't say the same thing about your goddamned morality," said Tolly Mune. Her tone was acid. Blackjack growled counterpoint at her feet. "Why the hell did I ever help you keep this goddamned ship? What a damned *fool* I was! You've been alone in a power fantasy too damn long, Tuf. Do you think somebody just appointed you god, is that it?"

"Bureaucrats are appointed," said Tuf. "Gods, insofar as they exist at all, are chosen by other procedures. I make no claims to godhood in the mythological sense, yet I submit that I do indeed wield the power of a god, a truth that I believe you recognized long ago, when you first turned to me for loaves and fishes." When she began to reply, he raised a hand, palm outward. "No, kindly do not interrupt, I will endeavor to be brief. You and I are not so different, Tolly Mune—"

"We're *nothing* alike, damn you!" she shrieked at him.

"We are not so different," Tuf repeated calmly, firmly. "You once confessed that you were not a religious woman; nor am I one to worship myths. I began as a trader, yet having come upon this ship called *Ark*, I began to find myself dogged at every step by gods, prophets, and demons. Noah and the flood, Moses and his plagues, loaves and fishes, manna, pillars of fire, wives of salt, I must needs have become acquainted with all. You challenge me to declare myself a god. I make no such claim. And yet, it must be said, my first

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act upon this ship, so many years ago, was to raise the dead." He pointed ponderously at a work station a few meters away. "There is the very spot at which I performed that first miracle, Tolly Mune. Moreover, I do indeed wield godlike powers and traffic in the life and death of worlds. Enjoying as I do these godlike abilities, can I rightfully decline the accompanying responsibility, the equally awesome burden of moral authority? I think not."

She wanted to reply, but the words would not come. *He's insane,* Tolly Mune thought to herself.

"Furthermore," Tuf said, "the nature of the crisis on S'uthlam was such that it admitted to a solution only by godlike intervention. Let us suppose briefly that I consented to sell you the *Ark*, as you desired. Do you truly suppose that any staff of ecologists and biotechs, however expert and dedicated, could have devised a lasting answer? It is my belief that you are too intelligent to entertain such a fallacy. I have no doubt that, with all the resources of this seedship at their beck and call, these men and women, geniuses with intellects and training far superior to my own, could and would undoubtedly have devised numerous ingenious stopgaps to allow the S'uthlamese to continue breeding for another century, perhaps two, perhaps even three or four. Yet ultimately their answers too would have proven insufficient, as did my own small attempts five years ago, and five years before that, and all the breakthroughs your technocrats engineered in centuries past. Tolly Mune, there is no rational, equitable, scientific, technological, or human answer to the dilemma of a population increasing in an insane geometric progression. It admits to answering only with miracles: loaves and fishes, manna from heaven, and the like. Twice I failed as ecological engineer. Now I propose to succeed as the god that S'uthlam requires. Should I approach the problem as human a third time, I would assuredly fail a third time, and then your difficulties would be resolved by gods crueler than myself, by the four mammal-riders of ancient legend who are known as pestilence, famine, war, and death. Therefore I must set aside my humanity, and act as god." He paused, looking at her, blinking.

"You set aside your damned humanity a hell of a long time ago," she raged at him. "But you're no god, Tuf. A demon, maybe. A puling megalomaniac, certainly. Maybe a monster, yes, a puling abortion, a *monster*, but no god."

"A monster," said Tuf. "Indeed." He blinked. "I had hoped that one of your undoubted intellectual prowess and competence might display better understanding." He blinked again. Twice, three times. His long white face was as still as ever, but there was something strange in Tuf's voice that she had never heard before, something that frightened her, that bewildered her and disturbed her, something that sounded almost like emotion. "You slander me grievously, Tolly," he protested.

Blackjack made a thin, plaintive meow.

"Your cat displays a keener grasp of the cold equations of the reality confronting us," Tuf said. "Perhaps I ought explain again from the beginning."

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"Monster," she said.

Tuf blinked. "My efforts are eternally unappreciated and met only with undeserved calumny."

"Monster," she repeated.

His right hand briefly curled into a fist, uncurled slowly and deliberately. "It appears some cerebral tic has dramatically reduced your vocabulary, First Councilor."

"No," she said, "but that's the only word that applies to you, damn it."

"Indeed," said Tuf. "In that case, being a monster, it behooves me to act monstrously. Consider that, if you will, as you grapple with your decision, First Councilor."

Blackjack jerked his head up suddenly and stared at Tuf as if something unseen were flitting about that long white face. He began to hiss; his thick silver-gray fur rose up slowly as he backed off. Tolly Mune bent and picked him up. The cat trembled in her arms, and hissed again. "What?" she said in a distracted voice. "What decision? You've made all the damned decisions. What the hell are you talking about?"

"Permit me to point out that, as of this moment, not a single manna spore has been released into the atmosphere of S'uthlam," Haviland Tuf said.

She snorted. "So? You've made your damned deal. I have no way of stopping you."

"Indeed. Regrettable. Perhaps one will occur to you, however. Meanwhile, I suggest that we repair to my quarters. Dax is waiting for his evening meal. I have prepared an excellent cream-of-mushroom bisque for our own repast, and there is chilled great-beer from Moghoun, a beverage sufficiently heady to please either gods or monsters. And of course my communications equipment is at your disposal, should you find you have something to say to your government."

Tolly Mune opened her mouth for a cutting reply, then closed it again in astonishment. "Do you mean what I think you mean?" she said.

"This is difficult to say," Tuf replied. "You are the one holding a psionic cat, madam."

It was an endless silent walk and an eternal awkward meal.

They took their dinner in a corner of the long, narrow communications room, surrounded by consoles, telescreens, and cats. Tuf sat with Dax across his lap, and spooned up his dinner with methodical care. On the other side of the table, Tolly Mune ate without tasting the food. She had no appetite. She felt old and dizzy. And afraid.

Blackjack reflected her confusion; his serenity gone, he huddled in her lap, infrequently lifting his head above the table to growl a warning at Dax.

And finally the moment arrived, as she had known it would: a buzz and a flashing blue light signaled an incoming communication. Tolly Mune started at the sound, scraping her chair backwards against the deck and swinging around sharply in her seat. Blackjack leapt off in alarm. She started to rise, and froze in indecision.

"I have programmed in strict instructions that I am on no account to be disturbed while dining," Tuf announced. "Ergo, that call is for you, by the process of elimination."

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The blue pinpoint flashed off, and on, and off, and on.

"You're no puling god," Tolly Mune said. "Neither am I, damn it. I don't want this goddamned burden, Tuf."

The light was flashing.

"Perhaps it is Commander Wald Ober," Tuf suggested. "I suggest you take his call before he begins counting backwards."

"No one has the right, Tuf," she said. "Not you, not me."

He gave a ponderous shrug.

The light flashed.

Blackjack yowled.

Tolly Mune took two steps toward the console, stopped, turned back toward Tuf. "Creation is part of godhood," she said with sudden certainly. "You can destroy, Tuf, but you cannot create. That's what makes you a monster instead of a god."

"The creation of life in the cloning tanks is an everyday and commonplace element of my profession," Tuf said.

The light flashed on, went out, flashed on again.

"No," she said. "you replicate life there, but you don't *create* it. It has to have existed already, somewhere in time and space, and you have to have a cell sample, a fossil record, something, or you're helpless. Puling hell, yes! Oh, you have the power of creation all right. The same goddamned power that I have, and that every man and woman down in the undercity has. Procreation, Tuf. There's your awesome power, there's the only miracle there is, the one thing humans have that makes us like gods, and the very thing *you* propose to take away from ninety nine point nine percent of the people of S'uthlam. The hell! You're no creator, you're no god."

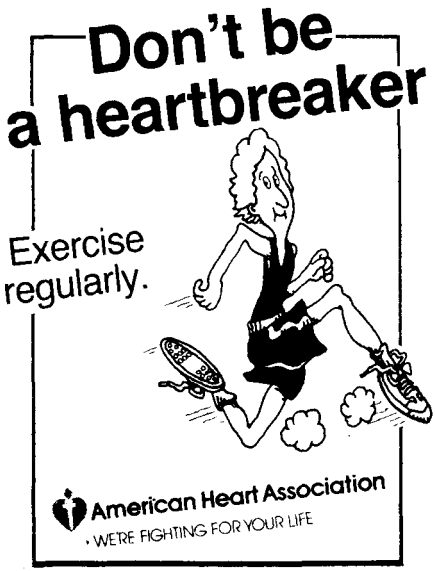
"Indeed," said Haviland Tuf, expressionlessly.

"So you don't have the right to make godlike decisions," she said. "And neither do I, damn it." She moved to the console in three long confident strides, touched a control; a telescreen ran with colors, resolving into a mirror-finish battle helmet emblazoned with a stylized globe insignia. Twin sensors burned crimson behind a dark plasteel faceplate. "Commander Ober," she said.

"First Councilor Mune," Wald Ober said. "I was concerned. The allied ambassadors are saying all kinds of wild things to the newsfeeds. A peace treaty, a new flowering. Can you confirm? What's going on? Is there trouble there?"

"Yes," she said. "Listen to me, Ober, and—"

"Tolly Mune," Tuf said.



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She whirled on him. "*What?*"

"If procreation is the mark of godhood," Tuf said, "then cats are gods too, it would seem to follow. They too reproduce themselves. Permit me to point out that, in a very short time, we have arrived at a situation whereby you have more cats than I do, though you started with but a single pair."

She scowled. "What are you saying?" She punched off the sound, so Tuf's words would not transmit.

Wald Ober gestured in sudden silence.

Haviland Tuf pressed the tips of his fingers together. "I am merely pointing out that, as much as I relish the properties of the feline, I nonetheless take steps to control their breeding. I reached this decision after careful consideration, and the weighing of all the alternatives. Ultimately, as you yourself will discover, there are but two fundamental options. You must either reconcile yourself to inhibiting the fertility of your cats, entirely without their consent I might add, or failing that, some day most assuredly you will find yourself about to cycle a bag full of newborn kittens out your airlock into the cold vacuum of space. Make no choice, and you have chosen. Failure to decide, because you lack the right, is itself a decision, First Councilor. In abstaining, you vote."

"Tuf," she said, her voice agonized, "*don't!* I don't *want* this damned power."

Dax jumped up on the table, and turned his golden eyes upon her. "Godhood is a profession even more demanding than ecology," Tuf said, "though it might be said that I knew the job to be hazardous when I accepted its burdens."

"It's not," she started. "You can't say," she fumbled. "Kittens and babies aren't," she tried. "They're people, they, they have the power of, that is, minds, minds and hearts as well as gonads, they're rational, it's their choice, theirs, not mine, I can't possibly make it for them, the millions, the billions."

"Indeed," said Tuf. "I had forgotten about the good people of S'uthlam and their long history of rational choice. Undoubtedly they will look in the face of war, of famine, and of plague, and then in billions they will change their ways and deftly avert the shadow that threatens to engulf S'uthlam and its proud towers. How strange that I failed to see this."

They stared at each other.

Dax began to purr. Then he looked away, and began to lap up cream-of-mushroom bisque from Tuf's bowl. Blackjack rubbed up against her leg, keeping a wary eye on Dax as he stalked across the room.

Tolly Mune turned back to the console very slowly; it took her a day to make that turn, a week, a year, a lifetime. It took her forty billion lifetimes, but when she had completed that turn, it had only taken an instant, and those lives were gone as if they had never been.

She looked at the cold silent mask confronting her over the comm link, and in that dark shiny plastic she saw reflected all the faceless horror of war, and behind it burned the grim, fevered eyes of starvation and disease. She turned the sound transmission back up.

"What's going on there?" Wald

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Ober was demanding, over and over. "First Councilor, I can't hear you, what are your orders, do you hear me? What's going on there?"

"Commander Ober," Tolly Mune said. She forced a broad smile.

"What's wrong?"

She swallowed. "Wrong? Nothing. Nothing at all. Puling hell, everything is incredibly right. The war's over and so's the crisis, Commander."

"Are you under coercion?" Wald Ober barked.

"No," she said quickly. "Why do you say that?"

"Tears," he replied. "I see tears, First Councillor."

"Of joy, Commander. Tears of joy. Manna, Ober, that's what he calls it. Manna from heaven." She laughed lightly. "Food from the stars. Tuf's a genius. Sometimes . . ." She bit her lip, hard. "Sometimes I even think he might be . . ."

"What?"

". . . a god," she said. She touched a button: the screen went dark.

Her name was Tolly Mune, but in the histories they call her all sorts of things. ■

THEODORE STURGEON, 1918-1985

Almost all of Theodore Sturgeon's many stories in this magazine (and its companion, *Unknown*) appeared before 1950. Half of our present readers hadn't even been born yet, but it would probably be hard to find one who didn't know his work, either from the many reprintings of those stories or from the large number he published elsewhere. Ted's writing was too richly varied to be confined to any one niche, and a great many readers—and writers—have found that it made a powerful, lasting impression on them. When I taught a college science fiction course I used to have students buy his *More Than Human*; I only assigned the middle section, "Baby Is Three," but I'm not sure I ever had a student who didn't rush back to read the whole book after tasting that much. That was typical.

Ted Sturgeon died May 8, 1985, at Sacred Heart Hospital in Eugene, Oregon, of fibrosis complicated by pneumonia. He is survived by his wife Jayne and seven children, but he will be missed by many more—by millions who knew him through his words, and especially by those who were also fortunate enough to have known him personally.

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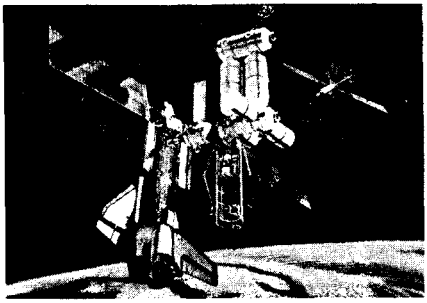

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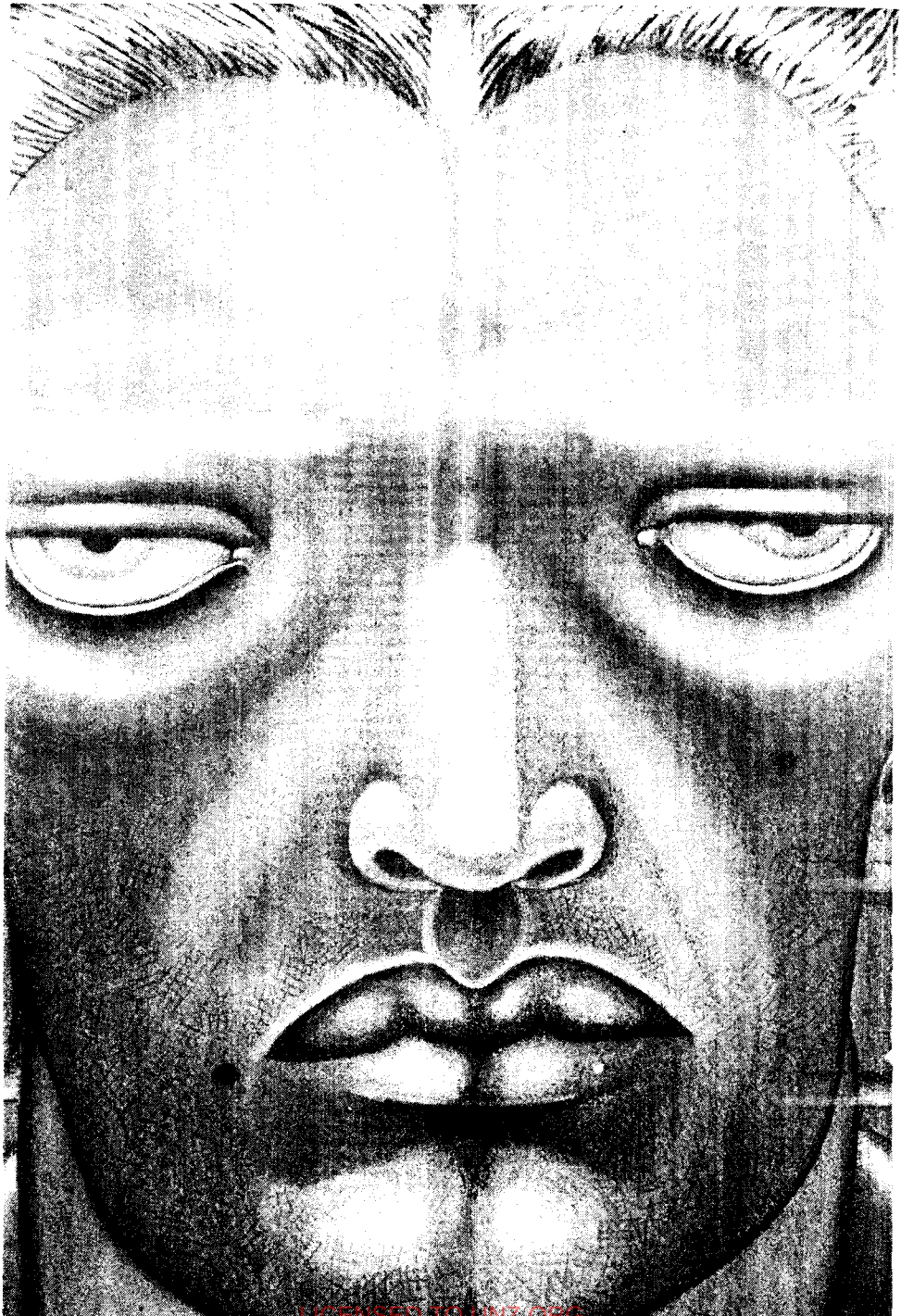

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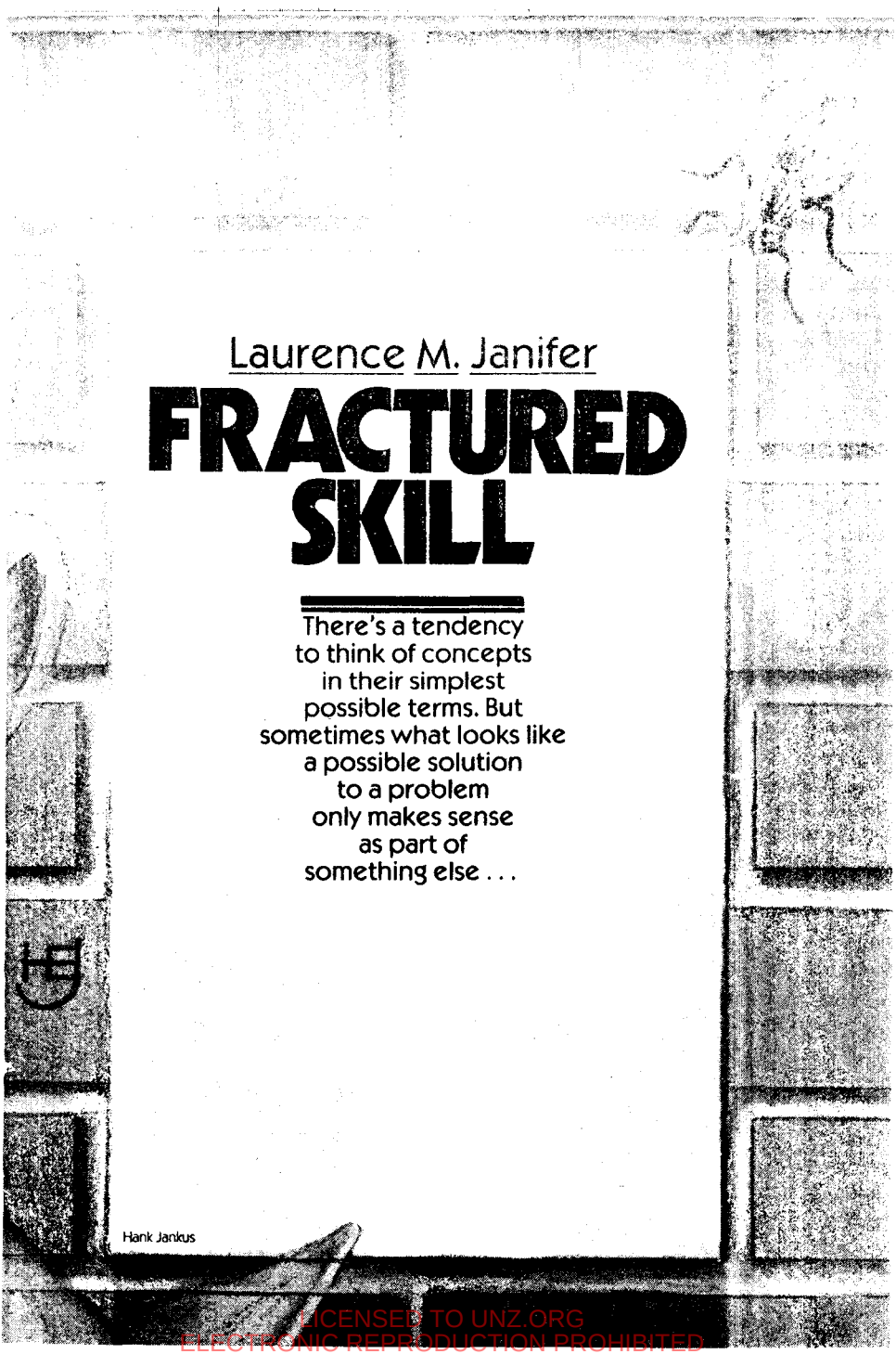
Laurence M. Janifer

FRACTURED SKILL

There's a tendency to think of concepts in their simplest possible terms. But sometimes what looks like a possible solution to a problem only makes sense as part of something else . . .



Hank Jankus

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"True amnesia," Gilman said. "It's a great rarity."

Staring at the little man, Roerik nodded. "There was one where I interned," he said. "The staff did everything humanly possible to keep him from recovering until a couple of classes had seen him."

"Drawback," Gilman said, "of a teaching hospital." He looked at the small man in the one-way-glass observation room. The man was sitting in a straight-backed wooden chair. He wasn't reading, or listening to the radio a nurse had provided; he wasn't watching the hospital TV the staff was paying a reduced rental on. He was just sitting in the straight-backed chair.

Roerik said, casually: "Anything being done for him?"

Gilman turned away to look at the younger man, almost angrily. "There isn't much we can do," he said. "As you know perfectly well."

"No implications," Roerik said. "Curiosity, that's all. I don't suppose there are any new techniques?"

Gilman was looking at the little man again. "Might almost be a catatonic," he said. "I wonder what he's waiting for—sitting like that."

Roerik grinned. "He's waiting for his memory to return. One day, the prettiest nurse in the hospital will go into that room with a small cardboard box. She'll open the box, and his memory will hop out of it and settle back into his mind. He'll thank everyone on the staff, distribute largesse, and ride off into the sunset. *With* the nurse," he added after a second.

"As good as anything we have for him," Gilman said. "No, there aren't any new techniques. Not even any promising-looking cardboard boxes."

"Chemical cues," Roerik said. "Neurochemical restoration. Suppression of input—give his mind a chance to find its own pathways again. Environmental variety—try saying that one five times fast—until he fastens onto something he can use as a clue."

Gilman stared at the little man. "You've been reading too much science fiction," he said. "There just isn't the Hell of a lot we can do."

After a minute or more, Roerik said: "The tailor. You know?"

"Give an amnesiac a thimble. If he's a tailor, he'll put it on the correct finger. Give him a jeweler's loupe. If he's a jeweler, he'll screw it into his eye. Now all we need is a collection of every implement used by every trade on Earth. For the one true amnesiac we get every ten years or so."

"Any idea of the cause?" Roerik said.

Gilman shook his head. "Read the history. He walked up to a total stranger, announced that he didn't know who he was or where he was, and asked for help. The stranger called a patrolman, and the patrolman brought him here."

"Great. And nothing to account for it."

"At that," Gilman said, "he's lucky he's still alive. If you go up to a total stranger—"

"Yes," Roerik said. "The odds are a good deal in favor of your being mugged. Or knifed. Or—name it."

Gilman went on staring. After a few minutes the little man shifted position in his chair. "We've put him through the complete battery," he said. "There's

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a slight endocrine abnormality—well within normal limits, actually. Nothing else we can find."

Roerik raised his eyebrows. "Isn't that a little significant, all by itself?" he said. "Put the average human being through a battery of tests, and you'll find something wrong. Not necessarily serious—but *something*."

"Or you won't," Gilman said. "It isn't an absolute. No; what we have here is a perfectly normal man—"

"With an extra bit of luck," Roerik said.

"—who happens to have amnesia," Gilman said. "I should think that balances out his luck, doesn't it?"

"Could be," Roerik said. "All the same—there ought to be something we can try."

Six hours later, he brought a full briefcase into the little man's room.

The little man was lying in bed with his eyes open. Roerik sat down in the straight-backed chair next to him. The little man looked round; there was scarcely any expression on his face, but Roerik thought he saw a trace of expectancy—it would have been too much to have called it hope.

"I'm here to help you," Roerik said.

The little man only nodded. Roerik reached into the briefcase and brought out a neurologist's rubber hammer. The little man looked at the hammer. Roerik put the hammer into one of the little man's limp hands, lying half-open at his side.

The little man grasped the hammer, picked it up and looked at it. The expression on his face was not quite curiosity; there wasn't enough of it for that.

After a few seconds he put the hammer down and Roerik took it back. He brought out a needle and a small spool of thread.

The little man looked at them both. He let them lie at his side, and Roerik left them there and rummaged in his briefcase again. A jeweler's loupe. A small wrench. A hand-size printing calculator.

The little man pushed a few buttons on the calculator. Roerik leaned across him to turn the thing on. The little man pushed three more buttons, and the paper roll jumped up as the machine printed 3, +, and =. The little man put the calculator down with the pile of other things.

Roerik brought out a trumpet mouthpiece. (He had spent several hours collecting as wide a variety of items as he could think of. The mouthpiece belonged to a night-duty floor worker, who practiced New Orleans jazz in the boiler room after hours.) The little man took the mouthpiece, which Roerik had sterilized, dried, and wrapped in a bandage before use. He stared at the mouthpiece, for a second, just as blankly as he had stared at the hammer or the thread or the calculator. Then he put it in his other hand, holding it gently between two fingers. He fumbled at his side and picked up the needle. As Roerik watched, he inserted the needle into the small end of the mouthpiece and tipped the mouthpiece up a bit so that it would stay. Fumbling again, he picked up the calculator with his free hand, and looked at Roerik.

Roerik, in a sudden access of sympathy, nodded and turned the thing on again. The little man frowned very care-

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fully and pressed two buttons simultaneously, holding them both down. He brought the calculator to his other hand, and, in a series of tiny, exact motions, turned the trumpet mouthpiece over and placed it between the calculator top and the paper-roll so that its wide end fitted there and the needle, as it began to fall through, rested on the calculator.

Staring brightly at both hands, the little man held his construction very still for a second. Then he turned his head, smiled gently at Roerik, and moved his hands so that the calculator was standing with its paper-roll down. There was a completely soundless flash.

"Time travel causes amnesia," Dimstanly said. "Well . . . that explains a few things, doesn't it?"

"Partial amnesia," Wibb said. "I had the language, you know. And—the hands remember. Once I had enough to jury-rig a small Traveler, my hands did the job. Quite by themselves, you know."

Roerik (who did not speak Transit) stared from one to the other. Dimstanly didn't notice.

"We'll have to shield the minds, I suppose," he said. "I mean—we do have to warn them, don't we?"

"Or nothing will exist at all," Wibb said. "Not that it would affect *us*—but to have one's entire past wiped out—"

"Not pleasant," Dimstanly agreed. "I suppose we'll go on trying." He followed Wibb's glance. "And you did have some success, after all. At least we have a specimen."

Wibb nodded. "We'll give him the full battery," he said. ■

ARBITRATING NEPTUNE'S COMPLAINT

A territorial dispute—1979 to 1999

Look, Pluto's orbit crosses inside you but once
every 1½ years (yours) for 1 month (his)
hoping to find summer recreation. That *is*
2 decades (mine), and the 3,000,000,000 km
closer in doesn't add much heat, I admit;
but sea god or not, you'll just have to
grant him his share of the sun and fun.
It's a mightly long stretch of beach.

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He could remember hearing his neck snap. In fact, Cody could remember every long minute after the accident, crumpled in a limp ball against the van's roof. He remembered the immediate numbing sensation, as if everything from his Adam's apple down had gone to sleep. He wondered if this was what death was like and felt cheated. Not a thing passed before his eyes, except a fly which had been in the van all afternoon in spite of his swipes at it with the road map. His St. Christopher's medal, a gift from Jenny before he went into the Navy, had fallen across his right nostril and he was having trouble breathing. He decided it was somewhat ironic to be suffocated by the demoted patron saint of travelers. Okay, so he had no business heading down to Tijuana for the deliberate purpose of losing a weekend in hedonistic debauchery —a broken neck, he felt, was rather severe punishment for a sin only in the planning stages. He hadn't even crossed the border yet. The blowout had sent the van through the guard rail and over the edge of the embankment. There wasn't a thing he could do about it except watch the scenery go by sideways,

S.C. Sykes

How much is a second chance worth?

ROCKABYE BABY

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tilt, then spin, just like in the movies. Only somehow the real thing was much more impressive.

The dumbest things occurred to him, and later he wondered how he had managed to have so much time to think about them. Like worrying about the case of beer in the back—if the ice chest would hold. It had. He remembered the letter to Jenny he'd forgotten to mail. It was still on the kitchen counter in his apartment because he couldn't find a stamp. He remembered worrying that he should have gotten stamps. He worried that the paint job on the van was going to get scratched. Scratched. They showed him pictures of the van later. By then he didn't care.

Mac had been luckier, riding in the Death Seat. He had splattered his nose and cheek against the windshield and broken some ribs but he was able to crawl out through the side window, and kept talking to Cody until help came. Cody would rather have gone to sleep.

The VA hospital became his home for a full year, and it would, he slowly realized, be something of an unwanted umbilical cord for the rest of his life. Jenny had come once, from Texas, to visit. He'd had to get nasty before she believed him when he told her to leave. It was one thing to have a nurse feed him. It was another thing entirely to have someone he loved spooning food into his mouth. He couldn't even put his arms around her with any coordinated dexterity.

He gave Mac his weight lifting equipment and his guitar and asked him to sell off or throw away everything else in the apartment.

"What about the fish?" Mac asked.

"Flush 'em down the john."

He'd been singularly proud of that fish tank. It was the central conversation piece in his first attempt at apartment decorating after getting out of the service. Most of his furniture was early Swap Meet but that 40-gallon cylindrical tank perched on a barrel was something to be admired. Mac asked if he could have it.

"Take it. Take whatever you want. I don't care." And he didn't care. He had difficulty trying to decide on the week's menu whenever the nurse read it off to him, checking his choices. Choice implied a preference, as if life could still offer him one deal that was better than another. As far as Cody was concerned his future was a wide arid wasteland and whether he wanted chicken or veal next Wednesday wasn't going to make much difference. Nothing was going to change the landscape.

He watched his hair grow back. They had shaved his head to clamp his skull in something akin to medieval ice tongs, keeping him immobile after miracle surgery that had failed to produce any miracle at all. By then he was bargaining for even semi-miracles—"Let me move my fingers," he thought. He prayed for inches of healing. But the doctors had been blunt with him. Nerves would not regenerate. What was severed was disconnected for good. No long distance calls to the toes. No forwarding address. No telegrams from the groin. He was aware that some bodily functions went on without him, without so much as his permission or a nod. If a dark stain appeared around the crotch of his blue pajamas then he knew the plumbing had sprung a leak. Somebody took care of

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it. Somebody took care of everything —from brushing his teeth to turning him over in bed.

He watched the hole in his throat close where the tracheotomy had been. It left a deep hollow but all his vanity had long since evaporated, along with modesty, mortification, and muscle tone. His body, at the time of the accident, had been in peak condition from jogging on the beach and carefully calculated weight lifting. He was sculpting himself for Jenny. Had been. Now, if one wanted to be poetic about it, he thought, his body was Christlike, post-crucifixion, pre-resurrection. He even looked rather biblical, letting his dark hair and beard grow. Being shaved by impatient attendants on the spinal injury ward was a frill Cody easily gave up. He felt guilty taking up their time. Most of the quadriplegics, or quads as they called themselves, grew beards. It was just easier. The place was understaffed as it was. And the ward was filled, due to the advancement of medical technology. Now broken necks weren't automatic death sentences. Just life sentences, Cody thought, watching bodies move, wedded to wheels forever for any semblance of mobility.

Paraplegics, sneeringly called "pares" by the quads, garnered not an ounce of sympathy on the ward. Most pares soon learned to temper their self-pity and helped out, feeding quads meals, fetching things, even emptying filled urine bags. Quads learned not to want things. There were too few hands to respond to their wants anyway. Cody learned to stare at flipping TV images, to lie silently in his own excrement until someone could get around to him, to wait until he could catch a visitor before asking for the magazine that had slid off the bed and onto the floor.

Such was life on the ward. Progress was measured in how many minutes he could sit up in a wheelchair before becoming faint. He watched his fingernails grow. Odd little ridges had appeared at the cuticle of each nail and they moved forward as time passed. They reminded Cody of tree rings, telling of drought years. Something had interrupted the body, a trauma before return to normalcy. Well, yes, thought Cody, a broken neck was slightly traumatic. And not a single thing in his life would ever be normal again. Even nail cutting felt funny. It almost nauseated him. The sensation was distorted somehow, as if an echo of feeling had, by the time it got to his brain, become a convoluted nightmare. He could see the nurse working gently with nail clippers, but it felt as if she were cutting off his fingers. There was a lot of that, a lot of the "phantom limb" syndrome, a Dali-esque canvas of body signals, S.O.S. messages spilling out of broken wires. What got through was something he would rather not have received. Ghosts he could do without.

After a year of learning to redefine himself in terms unique to those with spinal injuries, Cody left the medical sanctuary. He had been out on short excursions before, but always with other pares and quads. For a year he had been one of the wheeled majority. Now he was a specific minority in a walking world. And he didn't like it. He moved into a group home in Long Beach where several wheelchaired vets had set up housekeeping. Mac helped him get set-

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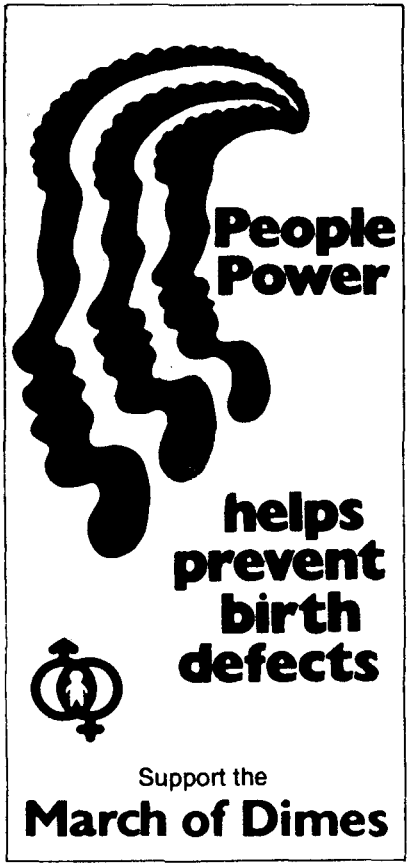
tled and then hung around, awkward, not knowing how to leave gracefully. He stayed for supper. Cody wished he hadn't, for he was still learning to manipulate the swivel spoon gadget in the hand brace, and self-feeding was still a messy business. His range of movement was limited to shoulders and upper arms, and fine-motor coordination was a skill he was still working on.

"You don't have to stick around," Cody said later as they sat in his room, Mac perched on his hospital bed because there was no place else to sit.



"You want me to go?"

"Yeah, I want you to go."

"I guess you're kinda tired—from the move and all . . . I'll be back in the morning to unpack your stuff—"

"No."

"I mean, to sort of get you settled—"

"Adam can do it." Adam was the live-in aide who ran the house and cooked the meals. He was black and well-muscled and used to lifting a man onto a bed, into a tub, off of a toilet.

"I can do it," Mac argued. "I don't mind doing it. I can take off work. It doesn't matter. I want to do it."

"I don't want you . . . around, okay?" Cody knew how it sounded, but he didn't care. Mac had slunk in and out of the hospital, guilty for walking, apologetic for his wholeness. Cody couldn't stand looking at him. The spidery red scar on his face just made Cody want to hate him and he didn't want to start abusing the last friend he had. Better to cut him free and be done with it.

"Don't . . . come around anymore," he said.

"What?"

"Just get out of my life, Mac. You don't owe me. You're not responsible. I absolve you of all blame. Okay?"

"What are you talking about?"

Cody waited for a leg spasm to stop. "I'm tired of your doing time at my expense. You're part of Before. You don't belong here, in my world anymore. And this is my world. You don't fit in. You're not wanted. How else you want me to say it?"

Mac studied his hands. "I don't know how to help. I don't know what to do."

"There's nothing you can do. I don't

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want your pain anymore, Mac. Just . . . go away."

And he did. Cody got a few phone calls from him at first—strained small talk. There wasn't much use in either one asking how things were going. They had nothing new in common and the past was something Cody didn't want to think about. The phone calls tapered off to occasional letters, then post cards, then nothing.

Time passed. Cody measured his progress in small triumphs of independence—learning how to empty the urine bag strapped to his right leg, doing his own bowel care, learning to open his own mail when there was any, mostly from his mother in Texas. His father was dead. Jenny's letters were returned unopened until they stopped coming. His mother sent him a clipping out of the local paper about the engagement. Jenny still looked pretty, he thought, and he knew he had done the right thing, closing that door. His mother had always been a clipping sender, but now he wished she would stop. He didn't care to hear what his old school buddies were doing these days. They weren't running in the same league, so to speak. He had endured one long tearful visit from his mother while he was still in the VA hospital and he could do without any more of those, too. He'd chosen to settle in California. At least there he was familiar with the nurses and a lot of the faces he'd come to know since entering his new world. California made space for "his kind," he thought. Building laws had been passed that helped make minor matters a bit more convenient, like drinking fountains he could reach, and more curbs with ramps he could use in his electric wheelchair. And too, California weather suited him. To survive Texas summers one needed to be able to sweat and that was something else his body no longer could do.

He started having preferences again. He learned to eat in public, ignoring stares. He decided to go to school. Mostly, however, he listened, and watched, and read. And thought. To escape. He got good at escaping. He could sit in the sun out on the patio and Go Away. That's what he called it for lack of a better term. He wasn't sure exactly where it was he went, but it felt good, and he didn't like coming back.

It was in his second semester at the local community college that he fitted a pencil into his hand brace and started doodling. He had rather enjoyed drawing in high school, but this was his first attempt at it since the accident. He drew a naked woman with fantasy breasts. He liked it. He drew faces. Then went back to bodies. He liked bodies. Female bodies specifically. Sketching wasn't easy. He had to tell shoulder and arm muscles how to compensate for fingers that could no longer so much as pick his nose. Shading was hard because he couldn't feel how much pressure he was putting on the pencil point except by looking.

Bushnell, Fielding, and Sharkey, the three other quads in the house, admired his work. They asked him to draw them some female bodies with fantasy breasts, too. Some preferred bigger fantasies than others. Sharkey wanted his fantasy in chains. He was into chains. He had been into motorcycles before he broke his neck running his Harley into a truck. Now, mostly he was into beer—and chains. Cody couldn't understand why

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Sharkey preferred his fantasy women bound until he began taking psychology courses. Then he still wasn't sure.

He began to think of life in terms of semesters. He chose courses because they mildly appealed to him, not because he had any particular goals in mind. He was one hundred percent disabled, according to his medical records. If he fell out of his chair he would have to lie there until somebody rescued him. Uncle Sam sheltered him somewhat financially, since he had given the bloom of his youth to scraping paint off of battleships down in San Diego. It was lucky he had gotten his yen for traveling out of his system, he thought. He had seen the world, at least most of the seaports of the world, but as Sharkey had said, that was a little like judging a woman only by her fanny. You couldn't judge the whole world by its sea. You had to go inland to get perspective.

Cody began to notice that his semesters gravitated toward the arts. He had tried a geology course but the field trip was out of the question. He'd had to do a term paper instead and he hated typing—one letter at a time with a typing stick on an electric typewriter. Art was better.

He bought a drafting table and his art supplies started looking professional. He had a multitude of pencils and knew how to use them with finely honed expertise.

Seasons passed with a kind of sameness, but Cody finally had a passion—his art. Sharkey would sit and watch him draw, opening flip-top beer cans with his teeth until he passed out, sliding out of his chair and onto the floor if his seat belt wasn't fastened. Adam would hoist the man over his shoulder and carry him off to bed.

"He needs a woman," Adam said, "but he ain't got a mind big enough. You got a mind big enough," he said to Cody.

Cody understood what he meant. His inner landscapes were busy. And his women didn't have chains. There were a few real ones who talked to him on campus, and called him once in a while, but Cody let it go at that. There were phone numbers, passed from quad to pare, for women with special qualities, and there had been times he had used the numbers. But his inner universe was infinitely more appealing. The art consumed him. He would surface from hours of deep concentration on a piece of work and know only that he had been content for a little while.

Besides beer and bondage, Sharkey's other main occupation was as a volunteer guinea pig for a medical research laboratory in L.A. Bushnell, who got his diving into a sunken log while on leave, and Fielding, another van roll, both looked upon Sharkey as a madman.

"I got no government sugar daddy," Sharkey belched, blowing a long strand of copper hair off of his nose. They were sitting around watching a Lakers game on TV and Adam was filling out forms that Sharkey would need for the next project.

"I still say you're fuckin' nuts," Bushnell said. "You don't even know what they're going to do, and you're signing your name on the dotted line."

"Did you *read* that fine print?" Fielding asked.

"It don't matter," Sharkey smiled. "What the hell can they do to me? It's

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all been done, right? Ain't nothin' else they can do to make it any worse. Sure can't hurt." He laughed at his own joke. Sharkey had burned his left calf badly the previous winter when he leaned his leg against a wall heater in the bathroom. His first hint that all was not well was the smell of scorched flesh. The result was a curiously graceful brand in the shape of a spiral, for that had been the design on the heater grillwork. Since his arms were already well-tattooed, he was considering ways to brand his right calf with a skull and crossbones before the others talked him out of it. Pain was only a memory. From the neck down anyway.

Cody pulled a No. 2H pencil out of his hand brace with his teeth and inserted a No. 6B. He was working on a large portrait of Stravinsky, using a small black and white photo as a guide. One of the students in his music theory class had commissioned the work and he was pleased with the way it was turning out. Sharkey had been disappointed. He quickly lost interest if Cody's subject was not female, preferably nude and taut in all the right places.

"What's the name of this project?" Cody asked. Sharkey's last experimental undertaking was called PROJECT IRON-FLEX. It had involved intricately-geared hand and finger braces. His left arm—for he had been left-handed prior to the smash-up—was encased in something that looked like chromed armor. It was designed to create movement through carefully flexed shoulder muscles. It had worked a little too well. Beer cans, once clutched, were crushed before Sharkey could get them to his lips. One night in a bar he had pinched a girl's bottom and almost caused a riot because the bottom was property claimed by a member of a motocycle gang. The man had bristled and slung a few epithets at Sharkey who in turn flexed a muscle that raised his middle finger. Later, in the hospital, he said, "I never thought he'd hit a guy in a wheelchair, man." PROJECT IRON-FLEX was scrapped soon after. Cody thought it was just as well. He had an aversion to metal gadgets. He was melded to mechanical devices too much as it was. Watching Sharkey in his hardware reminded him of the artist H.R. Giger's biomechanoids, nightmares that were half human, half metallic torture machines. He could never have become a beneficiary of PROJECT IRON-FLEX.

Sharkey cruised over to Cody's drafting table to check on the drawing.

"When are you gonna get back to tits?"

"Soon. So what's the name of the new project?" Cody asked again.

"R.A.B.B."

Fielding, in the kitchen getting another beer, laughed. "Rab? Like in Rabbit Test? Hey, Bushnell," he hooted, "they're gonna kill Sharkey to find out if some lady's pregnant."

"R-A-B-B," Sharkey spelled.

"What's it mean?" Bushnell asked, rolling over. He preferred using a manual chair for the arm exercise. He was impressive for a quad, Cody thought. Bushnell could lift his butt off his chair with his arms for minutes at a time. It helped keep his skin from breaking down. Decubitus ulcers from lack of circulation were a constant worry. Cody

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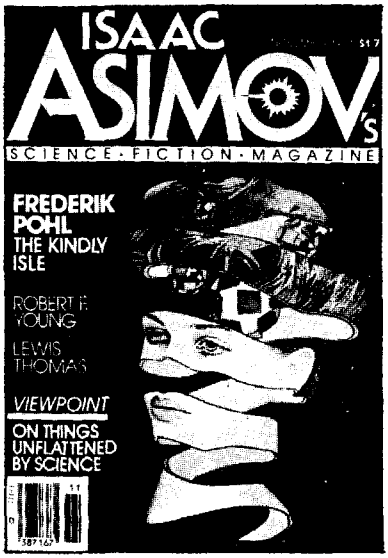

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had a terrible time with pressure sores and he envied Bushnell's agility.

"I don't remember what it means," Sharkey muttered. "It don't matter what it means. I can't talk about it. It's top secret."

"A regular threat to national security, huh?" said Bushnell. "God forbid the Russians get quads on their feet before we do. Come on, what's R.A.B.B. mean?"

"Rockabye Baby," Adam read, holding up one of Sharkey's forms.

"Hey, that's secret, man!" Sharkey yelled, zipping over to snatch the document away from the aide.

"I knew it was a rabbit test," Fielding said. "Shark, they're gonna cut you open and—"

"No, they're not!"

"Told you to read the fine print, didn't I? Sucker."

"It's somethin' else. No cuttin'. I'm done with cuttin'." Sharkey had reluctantly agreed a year earlier to have the tendons in his legs cut to try to subdue violent leg spasms. The decision had somehow also severed his last hope of any miracle recovery. It was soon after that that he had turned his body over to the researchers.

On Monday a blue van with a hydraulic lift in back came to collect Sharkey, wheelchair and all. He waved goodbye to everyone on the porch as if he were headed for a trip to Disneyland.

"See you turkeys Friday," he said as the lift clanged shut behind him. Cody felt a flicker of nausea. He was reminded of cages. Traps and cages.

Adam picked up the morning paper from the lawn after the van had departed. "I'm not cooking nothing extra on Friday 'til I see his face, I can tell you that. First legal-type paper I ever seen that laid out funeral arrangements, in case."

Fielding and Bushnell looked at each other. "I *told* him he should have read the fine print," said Fielding.

Cody found his thoughts wandering all week and it irritated him. Sharkey's absence was intruding on his work, blocking his escape. Instead of dissolving into his nameless space, he found himself mulling over mental playbacks of episodes with his quirky housemate. Sharkey had come to their small commune more as a charity case than anything else. He'd had no place to go after leaving the hospital, a nurse had told Cody, except a county home. To be twenty-two and parked in a corridor between the elderly senile was Cody's notion of purgatory. So they had voted and sent for him. There were times they had been sorry. Sharkey's maniacal sense of the absurd bordered on true lunacy. Huck Finn with a pinch of strange. There was the time he tried to enter his electric wheelchair in a dirt bike scramble. And the time he had gotten a ticket for tooling around town in rush hour traffic. The officer had been embarrassed but determined after Sharkey ran the red light in his wheelchair.

But the man had brought some humor back into Cody's life. He had made them all laugh. The house was subdued without the stereo blasting country and western. They ate in silence.

"He'll be back, Friday. This is stupid," Bushnell said. "It's like he said, it's no big deal."

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"*We* shoulda read the fine print," Fielding mumbled.

On Thursday Cody did a pen and ink cartoon of Sharkey crawling up a Mt. Everest-sized breast. He placed it on the man's bed in preparation for his homecoming. Sharkey's room was a hodgepodge of interrupted projects, from his beer can collection to dead marijuana plants in a terrarium that had once housed a garter snake nobody could find. Motorcycle magazines and magazines full of naked beauties were stacked everywhere. A guitar hung on one wall and Cody wondered if Sharkey had been as good on the instrument as he claimed. His voice in the shower wasn't half bad, with a slight Louisiana inflection. Sharkey was always happy in the shower until the water ran cold. "It's never goddamn long enough," he would complain as Adam lifted him from the shower chair, dripping and shivering. It occurred to Cody that maybe that was Sharkey's escape. He reached up and stroked the guitar strings with a thumbnail. The strings were out of tune. He wondered if Mac had ever learned how to play his guitar. He hoped so. He hoped it was the center of smoky parties and good times as it had been once, long ago. He wanted its amber wood saturated with music, layered with melodies, not hung on a wall like a decorative icon.

On Friday the blue van pulled up and opened its metal mouth to disgorge Project R.A.B.B. It wasn't exactly a confetti and ticker tape return. Sharkey looked no different than he had when he left on Monday. He wasn't sporting any new mechanical devices. His wild copper hair was caught in a sloppy ponytail which was the way he always wore it. His Van Dyke beard was the same, the chipped front tooth from an ancient brawl was still there—nothing at all was changed. And yet Cody sensed a difference. Sharkey rolled up the ramp and into the house and asked what was for dinner.

"Missed your cookin'," he told Adam. "Never thought I'd hear me say that."

Bushnell offered him a beer. "So, how was Project Rockabye Baby? You cover any new terrain?"

Sharkey maneuvered his long lifeless fingers through the plastic mug handle and hoisted it to his mouth, spilling beer down the front of his T-shirt. "God, I been cravin' a beer all week," he sighed, belching.

Cody watched him wipe his face on his arm. What was different? Something had changed. Sharkey glanced up at him and then he saw what it was. Fear. His face was rigid with fear.

"So what did they do?" Fielding asked.

"Nothin'. Just ran a bunch of tests."

"All week?"

"All week."

"What kind of tests?"

Sharkey belched again. "You name it, they ran it. Lot of, you know, head tests, I.Q. junk."

"And they found out you didn't have an IQ." Bushnell said. "Hell, I could have told them that."

"Nutsy tests," Sharkey went on. "What do you call 'em, those ink blot things. And a physical like you wouldn't believe, man. Felt like I was gettin' ready to go to the Moon." He accepted another beer. "They said I passed."

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"Is that good or bad?" Cody asked.

"Good. I guess. Anyway, I got 'til next Wednesday to decide if I wanna do it."

"Do what?"

Sharkey wiped at the beer stain on his T-shirt. "Can't talk about it."

Bushnell lifted himself a few inches out of his chair to exercise. "Probably going to graft his head onto another body. If I was the body I'd sue. Nobody deserves a head like that. Total vacuum."

Suddenly Sharkey slung his beer mug at Bushnell, splashing the man and splitting his lip.

Bushnell wiped at his mouth and saw the blood. "You sonovabitch." In one swift move he rammed Sharkey's chair and swung his arm, clipping him on the cheek before Adam shoved them apart.

"You start poundin' on each other and I'll take your damned chairs away," the man warned.

Bushnell moved out onto the back patio to cool off. Sharkey departed for his room and asked to be put to bed. After he was settled Cody knocked on his open door. None of them ever closed their doors once they were in bed, for if they needed help Adam wouldn't hear them yell.

"This Project Rockabye Baby," said Cody, "is it risky?"

"All the kinks ain't been worked out, so they tell me." He hooked his arm through the bed rail and tried to roll to his side. "But, I swear to God, man, if it works . . ." His eyes were wet. "If it works . . . it could fuckin' turn the world around."

"How?"

"I can't tell you. God, I wanna talk to somebody about it. You'd be the one I'd wanna tell, man . . . Cody . . . it could change everything. But they're a long way off from gettin' it perfect. There would be things . . . I'd have to *forfeit* they said, if I decide to do it. The way I look at it, it ain't givin' up much."

"My God, it's *not* a head transplant is it?"

Sharkey's laugh was without humor, closer to hysteria Cody thought, and the emptiness of it, the madness in it, chilled him.

"No. I told you—no cuttin'. I just . . . go to sleep sort of, for a little while and . . . when I wake up—"

"Oh shit, not cryogenics. They're not going to freeze you until they figure out a way to regenerate a severed spinal cord in about two hundred years—"

Sharkey stared at him. "No. No cryo . . . stuff. Cody . . . what if I told you . . . it ain't gonna take two hundred years . . . that it's now. They can do it now."

Cody heard himself swallow. It seemed to take a long time to remember how to breathe in again. He could hear Adam in the kitchen whistling as he prepared supper.

"I never told you," Sharkey said finally. "I'll call you a damn liar if you ever repeat it."

It took a minute to make his mouth and mind work again. "How . . . do you know it's now? That they can regenerate nerves? There's no way—"

"There's a way. But it ain't all worked out. There's a few . . . drawbacks . . . I can't tell you no more. But if it works—" Sharkey waved an uncoordinated arm at his room, "they can

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have it all. It don't matter to me, everything that went before . . . it's nothin' to give up . . . for what I could have—"

He refused to elaborate further. Cody wondered if hopeless hope had finally broken him. Of the four of them, only Sharkey had refused to accept his body the way it was. Cody had, during his year in the VA hospital, gone through what the psychiatrist had called a "period of mourning" for his body. He had even contemplated suicide, hoarding the various pills proffered at night until he had a regular pharmaceutical company. But he had never been able to go through with it. Now, in spite of his limitations, there was a sense of peace within him. He savored every breath. He made plans. He . . . accomplished. His existence had meaning. All Sharkey had were memories of Before, and a pathetic collection of empty beer cans.

"Shark, whatever R.A.B.B. is . . . I hope it works for you. I really do."

"Yeah. Me too. Hey . . . thanks for the drawing."

He said goodbye to them while the blue van waited, mouth gaping. The farewell was oddly subdued. He had told them to rent his room to a new quad, not to wait for him to come back. "I don't know how long this is gonna take, man," he said, "so don't keep a light on for me."

"Are you sure you read all the fine print this time?" Fielding said, squinting in the morning sun.

"Yeah. I read it all. Hey, Bushnell, if you ever find my snake, you can keep him. Code, take care of my beer cans, okay?"

"Sure."

Cody spent the afternoon with country and western blaring on the stereo, drawing naked women in chains.

A month went by. They kept his room ready. Fielding's nine-year-old son was planning to visit him during Christmas vacation so Adam tidied up Sharkey's room a bit to use as a guest room. He hauled the men's magazines out to the garage and stored the beer can collection in boxes in the closet. Fielding was nervous about the marijuana terrarium so that, too, went out to the garage. It was his son's first extended visit since the man's divorce, and he was worried about how it would go. Few marriages could survive a broken neck, Cody had come to realize, and not many old friendships endured. He had heard horror stories from other quads and pares—of being taken for every cent they had as fast as their wives could pack, of aides and housekeepers who stripped their homes of everything, abandoning them in the night. Bushnell had once almost married, post-accident, but when he demanded that his fiancée sign a carefully worded prenuptial contract, she backed out. Had they divorced, she would have relinquished all rights to any of his possessions. Cody felt it was the distrust that had killed the relationship, not the contract.

Fielding's divorce had been amicable and at his request. His ex-wife still talked to him on the phone and he worshiped his son who had been three at the time of the accident.

"What am I going to do with him for five days?" he said. "What do we do after Disneyland, for Chrissake?"

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"You'll think of something," Cody assured him.

"What if I embarrass him?"

"If you do, he'll get over it. He'll get used to you—to all of us. Kids adapt."

"Does the house smell okay? I mean, not like pee or anything?"

Cody sniffed. "I can't speak for Sharkey's room. It may smell of dead snake. I'm not sure. Right now all I smell is barbecued chicken in the oven."

The visit went smoothly. Cody got a neighbor to come over and take snapshots of the little boy so he could later make sketches to give Fielding for his birthday. He wondered fleetingly if he might have had children of his own by now had his life not been so altered. Would they have looked like Jenny, he mused. He calculated. He was now into his sixth year as a quad. Had he married Jenny he might have had a child ready for kindergarten by now. He began to sketch imaginary children, and traveled into mind territory he'd never thought about before.

When two months had passed without word from Sharkey, Bushnell called the Bio-Med Research Center to find out what was going on. "They said he's not there anymore," Bushnell reported to the others after he hung up.

Cody pulled away from the drafting table. "What do they mean he's not there? He's got to be there."

"Well, he's not there now. They were real closed-mouthed about it —wanted to know what I knew about Project R.A.B.B. You don't think—"

"No," said Fielding. "They would have told us if he was dead. Wouldn't they?" He looked at Cody. "I mean, we've got all his stuff . . . everything."

The next day two men from the research center came to take away Sharkey's personal effects. They seemed uninterested in the beer can collection, selecting only Sharkey's loud Hawaiian shirts, jeans, and other personal things, including his guitar. They were evasive concerning the man's whereabouts. They did say he would not be returning to the house.

"He's dead. He's gotta be dead," Bushnell said. "And they're afraid if word gets out that they wasted a human guinea pig they'll lose all their government funding. That's why they're not talking. They killed Shark. They killed him."

"No," Cody said slowly. "If he were dead they wouldn't have taken his guitar." A sudden coolness spilled down through him as if all the blood in his body had just rushed to his stomach.

"Why would he want his guitar?" Fielding asked.

"To play it," said Cody.

"Sure. Very funny."

Cody nodded. "Yeah."

Sharkey's absence was a little like that of a friendly alley cat that just wasn't around anymore, Cody thought. As a kid he'd always had cats. They came and went and when they disappeared he sort of wanted to believe it was because they'd found someplace better, not that they had met with disaster. That was the way he thought about Sharkey. At least it let him think of other things. Still, sometimes at night when sleep didn't come, he wondered.

They waited two more months for

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some kind of contact from the man before reluctantly putting word out for another tenant. No one spoke of him, but they kept his beer can collection and other paraphernalia in storage, waiting. His magazine subscriptions mysteriously stopped so they knew somebody, somewhere, had made some address changes. Cody seized on an inspiration one day and typed out a letter to him in care of the research center. It was returned with all kinds of red-stamped cancellations. It seemed as if Sharkey himself had been cancelled out of existence. Cody tried a second letter addressed to the house and laboriously printed PLEASE FORWARD on the envelope. That letter didn't come back. But they still didn't hear from him.

The rainy season tapered off into the dry season—California summer. Cody became totally absorbed in a graphic arts course. He designed a music festival poster for a contest and won first prize. More commissions came in, more than he could handle. He was happy. Wilson, the new quad, introduced Cody to his sister. Wilson had been a copter pilot in the Navy. He had never even had a near miss. He got his falling off a roof while putting up a TV antenna. Wilson's sister was pretty. She asked Cody out to a movie. He invited her to the Sawdust Arts Festival in Laguna Beach. Cody found her easy to be with, for she was used to quads and the idiosyncrasies that were a part of their world. But he didn't think he could love her. The essence of Jenny was still present in all his fantasy women and always would be.

Cody was waiting for Adam to meet him outside the Book Nook on Hollywood Boulevard when he saw Sharkey crossing the street. Walking. Free and easy. Cody stared. It definitely was Sharkey. There was no mistake. His red hair was cropped neatly and only the mustache remained from his Van Dyke. But it was Sharkey. Cody felt his voice leave him as he tried to shout to the man. Sharkey reached Cody's side of the street and started moving down the walk, away from him.

"Shark! Sharkey! Wait!" Cody hit the switch on his chair and moved after him, weaving between pedestrians. "Sharkey!" he bellowed with what little force his lungs could muster.

The man stopped and turned around. Cody gaped at him. It wasn't Sharkey. The face was so similar—even the gray of his eyes, and the Roman nose were like Sharkey's. Cody had an eye for detail and every shadow of cheekbone in that man he knew, for he had sketched his friend many times. But Sharkey's skin was pitted. There had been a scar over his left eye from a broken beer bottle in a gang fight when he was fifteen. This man's face was flawless —without so much as a worry line.

"I'm sorry," Cody said. "I . . . thought you were somebody I knew."

"You called me something," the man said. There was no hint of Louisiana in his voice. He didn't sound remotely like Sharkey.

"You look . . . a lot like somebody I used to know . . . an old friend."

The man stared at him. "Am I? Your old friend?"

Cody swallowed. The early evening crowd was out. He didn't like hanging

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out on the boulevard after dark. "No. My mistake. Sorry." He wished Adam would show up with the van.

"Did you call my name?" the man asked, continuing to stare at Cody.

"Just a mistake." Cody turned around to head back to the book store.

"My name is Sharkey. John Sharkey. Do you know me?"

Cody spun around so fast he almost tripped a woman with his foot rest.

They sat at a table in the smoke-filled bar. Cody couldn't get his chair under the table top, so he parked at an angle. The waitress didn't hide her irritation as she took their order, addressing Sharkey only, as if Cody were mentally incapacitated as well as physically handicapped. It was a reaction he was long used to, but it never ceased to anger him. The fact that he was crying didn't help the situation. Sharkey ordered a beer for Cody and Perrier for himself.

"Oh my God—" was all Cody could say for several minutes. "It can't be you. How can it be you? What happened? Oh Christ! They did it! They really did it." Every time he thought he was under control, the tears welled up again. "It's a goddamn miracle! You're a walking miracle. Shark, why didn't you tell us? Why didn't you come back?"

"I'm . . . not supposed to contact anyone from . . . Before. I didn't know anyone *to* contact. I don't know you. You tell me your name is Cody. You tell me we were friends. I must have known you once. But I don't remember. I don't remember any of Before."

Cody watched him pour the Perrier into a glass, grasping the bottle easily with long tapered fingers. He had never realized how tall Sharkey was. "How did they do it? What did they do to you, Sharkey?"

"I can't talk about it. I'm sorry. I'm not allowed."

"Shark, this is *me*. This is Cody. I know abut Project R.A.B.B. You told me about it. Remember?"

"No. I don't remember. How much do you know?"

Cody maneuvered the glass beer mug to the edge of the table, but couldn't lift it. "I've got a plastic mug in my backpack. Can you pour this in it?"

Sharkey reached into the cloth pouch tied to the back of the wheelchair, and transferred the beer to the lighter container.

"I know R.A.B.B. stands for Rockabye Baby. That the research dealt with nerve regeneration. That's all you told me. Sharkey, what happened?"

Rock music blared out of a jukebox. "Did I like music like that?" Sharkey asked. "They tell me I was interested in music, but I don't know what kind. I have a guitar. But I don't know how to play it. I've tried, but—"

Cody watched him make wet circles on the table with his glass. "You like country and western. I like R&B and rock. We used to have fights about it."

"We did?"

"Sharkey, look at me. What the hell did they do to you?"

"I don't know. All I know about anything is what they tell me. I'm still . . . learning. I don't remember Before. But I want to. Can you tell me about Before? What was I like?"

"Different."

"How?"

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"I'm not sure—beyond the obvious. You're on your feet." Cody frowned. "Your arms . . . roll up your sleeves." The tattoos were still there. It was really Sharkey all right. "But your face is smooth. And . . . your tooth is fixed. And there's no scar over your eye. Did they do plastic surgery, too? Why?"

Sharkey shook his head. "No. It doesn't involve that."

"Raise your left pants leg."

The man looked puzzled, but did as he was told. The spiral scar was gone.

"Everything gets regenerated," Sharkey said quietly. "They can't help it. They can't localize the process. They're working on it, though. My tonsils are back, they said, and my appendix. I had to decide for myself about circumcision. Had to start everything over from scratch. Everything. I feel kind of lost. I don't have much to go on. They're working on that, too. How else am I different? I want to know."

Cody gestured to his glass. "You don't drink beer anymore?"

"I haven't developed a taste for it. I liked it before?"

Cody nodded. "You don't sound the way you used to sound."

"The tapes . . . they try to put things back, afterward. They try to make things the same, but they don't put back . . . the original things. They can't. They don't know how."

"What do you mean?"

"The memories—everything that made me whoever I used to be. Everythings gets sort of . . . erased. They can put back academic things. They can do that. They tell me I score better in math than before. I know . . . facts. That's all."

Cody felt dizzy, the way he used to feel when he first sat up in a wheelchair. Everything was distorted. He'd not drunk half the beer, but he was sure that if he took one more swallow he would throw up. "This is damned confusing," he said.

"Yes. It is," Sharkey agreed. "I think I've said too much. But I need to know. Tell me who I am. What did I like? What did I hate? Why did I let them take everything from me?" The intensity of the man made Cody uncomfortable. If ever someone looked haunted, Sharkey looked driven to the brink of madness. And yet there was a distant quality in his face, as if he were operating through remote control, trying to remember expressions that corresponded to emotions that were no longer there. Nothing was quite coordinated. He blinked. "I can't remember why I . . . want to be alive," he said.

Little by little Sharkey told him what he understood of Project R.A.B.B. "It's done through a kind of . . . regression technique. I don't understand much of it. They found out that in each of us there's a sort of genetic switch that controls the production and growth of cells. They were looking for the switch that triggers cancer cells, they told me, and they stumbled across the regeneration switch. There's a time—a very brief time, close to birth, when the body can correct some injuries, if the genetic switch is on. So . . . they figured if the brain could be convinced that the body was prenatal—the regeneration could be triggered. The catch is, that when they regress a mind back to that stage, all memories are lost. For good. Everything is erased. I was 'born' nine

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months ago. My womb was a black tank filled with Epsom salts and water heated to body surface temperature. I had to learn to crawl and walk and talk all over. They try to put things back . . . but—" Sharkey's gaze focused elsewhere for a moment. "They brought me clothes they said were mine. And showed me pictures of who I was. It was like reading a book about somebody else. I can't . . . there's nothing to connect any of it to. My earliest memory is of reaching up to touch a stethoscope. And . . . being cold. I can't get warm. I feel so . . . cold all the time."

"So that was what you had to forfeit," Cody murmured. "Just memories."

For a second something broke through Sharkey's tranquil mask. "*Just* memories? You don't know. You can't know what it's like, living like this."

"And you don't remember," Cody said, "what it's like, living like *this*."

"I've been told what it was like."

"*Telling* isn't *living* it!"

"I know."

Someone had punched buttons on the jukebox for a popular country and western song. It was one Sharkey used to sing in the shower, a favorite. There was no flicker of recognition in his eyes now.

"There were three others, before me," he said, breaking the tension. "They're all dead. They . . . killed themselves."

"Why?"

"They don't know. They're working on it."

"Sharkey, I want to volunteer for this."

"No. Don't." There was fear in his eyes, as if he had just contaminated Cody.

"Whom do I contact?"

He hated hospitals. And every memory connected with them. The Calmar Bio-Med Research Center, however, felt more like a medical Pentagon as he followed a white-coated technician through a maze of corridors and doors, his chair humming. Fielding and Bushnell had called him crazy to consider volunteering himself for research. He had not told them of his meeting with Sharkey. He feared, above all, the failure of promised miracles. Better they didn't know, unless it worked, he thought. Wilson, too, had heard tales of medical guinea pigs and scoffed at hope. It was their only defense, Cody knew. He would not let them bleed needlessly. Adam had flatly refused to take him to the research center.

"You won't come outta there," he grumbled.

So it had been Diane, Wilson's sister, who had driven him in the van to L.A. She waved to him as he was escorted into the white building, promising to be back at two.

Dr. Nicholas Meyers placed his fingertips together, studying Cody through thick glasses.

"Frankly, I'm quite disturbed that you've come here, Mr. Cody. John did tell us he talked to you. . . . You must understand he is still under treatment. Project R.A.B.B. is quite confidential. We are years away from any public statement concerning this research. John left the grounds without our knowledge or permission. That he spoke with

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you—" The man's fingers parted, apparently opening a floodgate of secrets spilled through the breach in security. Cody thought. He wondered if Sharkey was being kept under guard in some underground cell.

"Where is he?"

"John is, at present, being taught life skills to help him toward independent living. When he has completed training—"

"When will that be?"

"Another year perhaps."

"I want to volunteer."

Meyers placed his hands slowly on the mahogany desk, palms down flat. Cody was reminded of his father. The gesture said, "Let's think this through. Let's not be hasty." His father had always been a careful decision-maker, weighing all options before he spoke. Cody thought more like his mother, making his decisions on an emotional wave, then riding it out to the end, refusing to concede that his choice might have been the wrong one. This was how he had wound up in the Navy.

"I'm here to volunteer for Project R.A.B.B.," he said again.

"I'm well aware of that. However . . . ."

"I know there are risks. Sharkey told me. I don't care."

"But *we* care, Mr. Cody." The man sat back, considering. "In its present stage of development, Project Rockabye Baby is one of the most exciting and most dangerous discoveries we've ever come across. The potential for its misuse is enormous. Brainwashing in the truest sense of the word. We're looking for safeguards against that. We're trying to find a way to trigger the regeneration process so that it focuses only on specific areas." He flashed a sudden smile. "Imagine the possibilities—total body rejuvenation—the ultimate eternity elixir. We *can* live forever, rebirthed over and over . . . but we must find a way to keep the . . . tapes, so to speak, from being erased."

"Memories."

"Yes. Exactly." Meyers's brief effervescence was reined back under scientific control. "We are only beginning to understand the ramifications of this kind of loss. Seemingly trivial matters . . . every experience of your life, from birth, no matter how deeply buried in your mind, is still vivid if tapped by the right probe. These experiences constitute the fullness of one's personality. At present we must forfeit the one for the other."

Cody felt a coolness at the back of his neck. "Is that why they commit suicide?"

Meyers reconnected the tips of his fingers, closing floodgates. "We are studying the . . . side effects, the emotional trauma involved. It's much more complex than simple amnesia. Subconscious memories are also erased. Everything must be replaced."

"They trade a mind for a body and forget what living was for," Cody said.

"We're trying to rectify that."

"How?"

"If you qualify for the program you will be told." The man took several papers from a drawer and placed them in front of Cody. "We'll need your permission to obtain your medical records." He pointed to places for Cody's signature.

"There's a hand brace with a pen

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attached in my backpack," Cody said, reading over the papers. In minutes his quivery scrawl would set him on a path he was not sure he was ready to explore. Still, he was certain of his future as it was now. He adjusted the pen with his teeth and signed.

The testing took almost two weeks. Cody felt physically drained and brain-picked. He was homesick, to his surprise, and became incensed when he was not allowed to call Fielding and Bushnell, just to talk. He asked for some art supplies and began sketching, desperate to escape into his nameless bliss if even for a few minutes.

"If I pass," he asked Meyers one afternoon while the doctor took another blood sample, "I mean, if I qualify for this, and it works, will I lose my art?"

"We can give you art instruction to try to replace what is lost. Beyond that I can't answer. The creative process is a largely unknown area. It tends to be a right brain function. We find that left brain functions are much more easily replaced."

"You mean I might not be able to draw afterwards?"

"We don't know. You may have a genetic predisposition toward art. Emotional inclination is another matter. No one fully understands the need to create—what drives one man to paint, another to compose music, another to break the world record for flagpole sitting. Whether you re-establish your artistic direction is an unknown. Attempting to replace twenty-seven years of life in a year's time is an arduous task."

"Can you do that?"

"No."

Cody thought about not being able to draw. There was irony in the situation, he knew. Had he never lost the use of his body, his body would probably have been the only part of him he would have developed. He might have gone back to the oil fields, doing blue collar labor, the only job he'd ever held prior to becoming gunner's mate in the Navy. He wondered if he would ever have discovered his artistic ability. No. He would have bowled maybe, and gotten a beer belly, and . . . would he have ever attempted college? Where would his ambitions have led, he mused, had life not played such an ultimate joke, making him whole in halving him, separating his mind from his body.

"Why can't I see Sharkey?"

"Security reasons."

"Does he sing in the shower anymore?"

Meyers withdrew the needle from Cody's arm. "Not to my knowledge."

He qualified. He sat at the long table ringed with white-smocked doctors and scientists and listened as they explained the procedure and the risks involved, should he consent to become a part of the project. It sounded magical, he thought—a deep sleep of approximately six weeks, wired up to a multitude of machines designed to serve as his surrogate mother. He would rest in a kind of fetal position in a black box that looked more like a coffin, he thought, when they showed it to him.

They gave him two weeks to make a decision, longer than they had given Sharkey, and sent him home with a tape recorder.

"Should you decide to participate in

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the project," Meyers told him, "you'll have three weeks to place whatever memories you want to keep, on tape. Anything you wish to preserve." He paused. "A word of advice—you'd best make it a mixed bag."

"What do you mean?"

"Don't select only good memories. The negative also serve a purpose. One more thing . . . your friend—John Sharkey—"

Cody waited for the words that would confirm what he had suspected for the last several days. Meyers looked upset. Guilty.

"He's dead," the man said finally. "He died two days ago."

"How?"

"He took a motorcycle and ran it into a wall. I'm . . . very sorry."

"Not enough memories?"

Meyers looked at him. "Perhaps. Maybe . . . just not the right memories."

At the house Bushnell and Fielding and Wilson watched him as if he were an impostor they were sure to catch in a mistake eventually. He knew he was making everyone feel awkward. He couldn't concentrate on his artwork. Everything seemed out of kilter, as if he had returned from a trip to a distant galaxy and nothing was quite as he had left it, but he couldn't figure out what was changed. He was changed. What he knew had changed him. That had to be it. He didn't want to tell them that Sharkey was dead. That would lead to more questions than he was prepared to answer. Instead, he sat in his room for hours at a time, running memories onto cassette tapes. Adam had to go out and buy more. They didn't ask what he was doing in his room with the door closed, talking to himself. They didn't ask him anything at all.

Cody tried to organize his memories systematically, in chronological order, reaching back to his earliest childhood. He talked about everything he could think of, including his fear of The Thing Under The Bed and how his mother had taught him to give it a name and the fear had gone away. Ralph-Under-the-Bed became a bedtime game. He didn't know if the memory was trivial, but it was his and he wanted to keep it. He remembered how his mother had read to him, the crushed ice and 7-Up when he had the mumps, the blanket tent in the back yard, the . . . it went on and on. The more he thought, the more there was to remember.

He called his mother up to tell her he loved her and she asked him what was wrong. His sudden nostalgia frightened her. Tapes mounted up. He talked until he was hoarse. In the middle of dinner he would think of something that was totally out of chronological order but he was afraid he wouldn't remember it later, so he zipped back to his room to record it while he had it. Memories came in disorganized clumps. He wondered if he should categorize them according to subject matter, rather than by years. He found himself digressing constantly, so wrapped up in a vivid memory he lost his train of thought. Playing back the tapes simply triggered more memories he'd forgotten to mention. And he wanted them as sharply etched as he could get them, filled with smells and sounds and tastes. The words began to remind him of a Bosch or Bruegel

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panorama, so intricate and crowded with happenings he felt he was drowning in verbal chaos.

Tapes covered his desk. Tapes were stacked on book shelves, in boxes, all over the floor along the walls. He gave up trying to mark them. There were times he worried that he was repeating himself, but decided twice was better than not at all. After much debate he decided he needed to put down the accident, too, so he would remember the why of things when it was all over.

It was during one such recording that he broke down in tears. There were no words, he realized, that could convey the anguish over what he had lost. No one could ever possibly know unless they had lived it. He remembered what Sharkey had said—that it was like reading a book. Cody looked at the roomful of memories. Would that be all they were, once it was over? A lot of words? Vicarious experiences belonging to someone else? Would the words be enough to hold the memory of Jenny's body next to him—the heat of her, the way her hair spilled over his face . . . the scent of her. . . . He closed his eyes. The tape ran, recording his silence.

"I need more time," he said when the two weeks were up.

"We need your decision now." Meyers looked apologetic.

"I'll need more than three weeks to finish my life story. It's not enough time."

"It's all we can give you."

"It's not enough. I don't plan to off myself for lack of a past. I want as much as I can collect. I want my art, all the books I've read—I'm on the seventh volume of *The Story of Civilization*. That's eleven volumes when I'm done, each book numbering God knows how many thousands of pages. You have any idea what that means? Can you put that back? I want nursery rhymes, I want . . . ." He stopped. "I can't do it. I can't get it all down."

Meyers straightened the ink blotter on his desk. "Does that mean you choose to bow out of Project R.A.B.B.?"

"No."

"Once you've made the commitment—once you've begun the Sleep, there will be no turning back. You understand that?"

"Yes. I just . . . there's not enough time."

"It's all we can offer." He laid the papers out in front of Cody.

Slowly Cody maneuvered the pen in the brace and signed his name.

Three weeks later, as they began to prep him for the Sleep, he was still capturing his past. In the last week he had begun to sketch memories, hoping pictures truly would be more than thousands of words.

He closed his eyes as they wheeled him into the room with the tank, praying he hadn't forgotten anything.

Suddenly a whole flood of memories tumbled across his mind—the summer of the worst dust storm he could remember, when the sky turned solid black in the middle of the day. They'd held wet washcloths over their faces and stuffed towels around windows and doors and still the dust blew in rivulets across the floor . . . going pecan thrashing with his dad, whacking the

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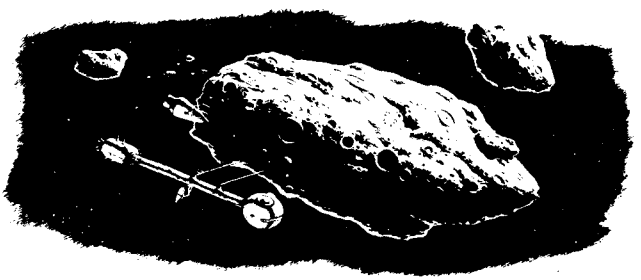
tree branches with long cane poles until the nuts fell like green-brown hail all around him . . . the blood brother ceremony at scout camp with Robbie Turner —he still had the scar . . . watching the tornado that sucked up half the town when he was nine . . . the drag race out by the lake when Tony Dawson almost flipped his dad's car into the spillway . . . too much . . . too many things. . . . Everything was important. Absolutely all of it. Cody felt his tears trickle back along his scalp and grinned.

"Wait a minute," he said, opening his eyes. Meyers and the others were like a green cloth wall closing in on him, needles primed.

"What?" Meyers did not sound happy. "You can't stop now. We—"

"Yeah, I can stop. I read the fine print."

There was, he thought, too much to say goodbye to. And yet—and yet there was something tantalizing about a blinding white, blank canvas. *Tabula Rasa*. Cody took a deep breath. "Okay," he said. "I'm ready." He hoped he had enough colors . . . it was going to be some kinda masterpiece. ■



IN TIMES TO COME

● We start off the nominal new year with a fascinating—and hard-to-describe—serial: *The Coming of the Quantum Cats*, by Frederik Pohl. For instance: it has several sets of characters with a single name, some of those names will be very familiar, yet no actual person appears anywhere in the story. It would be hard to say much more without taking more space than I have just to define terms—but it will all become perfectly clear when you read the story. You may have already guessed that it all has something to do with "parallel universes," but Fred does some things with that familiar old concept that you probably haven't seen before—unless you've been listening to real physicists as well as science fiction writers!

Pohl's novel, by the way, will be illustrated, inside and out, by William R. Warren, Jr. It's his first assignment of this magnitude for us, but we could only look at so many of his spot illustrations for John Cramer's "Alternate View" columns before realizing that he has far too much talent to keep in such a small slot.

Our January 1986 issue is also slated to include a Tom Ligon novelette that's a radical contrast to his story in this issue, and Ian Stewart's first "Billy the Joat" story in far too long.

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The Alternate View

FIRING LINE

G. Harry Stine

Science fiction buffs will recognize the title of this column. It's also the title of the Venus Equilateral story by George O. Smith published in the December 1944 issue of this magazine (it was called *Astounding Science Fiction* then). The Venus Equilateral stories were some of my first exposures to "hard" science fiction. They were loaded with electronic technology because the basis of the series was a manned interplanetary communications relay station located in the L-5 Lagrangian Point of Venus's orbit. The stories were populated by some of the wildest heroes I'd ever met—Don Channing, Walt Franks, and Wes Farrell—and some really dastardly villains in the personas of Mark Kingman and Hellion Murdoch. The technological wizards of Venus Equilateral always managed to beat the political games and piratical thrusts of the lawyers and conniving con men by using technology. This was heady stuff for a young pre-med college undergraduate who wasn't exactly sure yet what he wanted to do. In spite of the fact that many contemporary critics lambasted the series for having weak characters and being too technical, I later ran into the real-life counterparts of Channing, Franks, and Farrell. And, most important, to understand the story I had to learn something about electronics, which led me into physics, which led me into rocketry and astronautics.

Technically, the Venus Equilateral stories are obsolete today. George O. Smith was an electronics engineer and populated his stories with linear extrapolations of the technology of 1940–1945—vacuum tubes, mostly. No hint of solid state electronic components. No computers. No lasers. Most of the Venus Equilateral stories fall apart because of the technology that's been developed in the last forty years.

Except for three fictional gadgets which Smith introduced and which were described in such a way that they seemed real:

1. The electronic power beam tube discovered in the ruins of a Martian city;

2. A new dielectric that produced a 13 farad capacitor at 3,000 volts; and

3. A matter duplicator that was developed from the Martian power tube technology.

We haven't come close to the Martian power beam tube yet, although microwave power transmission is close. It may be created as a result of technical development of solar power satellites —which aren't dead except in the United States of America where the Department of Energy effectively buried the concept in 1980 by ignoring the voluminous reports they'd paid for.

And it should come as no surprise —although it did surprise me—to learn that, although nobody's developed Wes Farrell's 13 farad capacitor yet, they've now come awfully close. In fact, it's possible to create that 13 farad cap today, though not as a single unit.

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Whilst browsing through a computer component magazine, I chanced upon an ad for new "high technology" large can aluminum electrolytic capacitors. Today, you can buy a 1.0 farad capacitor at 100 working volts in a can 3.000 inches in diameter and 8.625 inches long. Twenty-five years ago, it was barely possible to create a one-farad capacitor by stacking hundreds of microfarad-range capacitors together in parallel, but the resulting pile of caps would literally fill a house. The availability of these large cans is the result of evolutionary development of capacitor technology driven by the requirements of computer power supplies which run at low voltages and require excellent filtering. The only way to get this sort of thing in the past was to use the John W. Campbell approach. Back in 1960, John needed a very large capacitor for filtering purposes in one of the wild electronic gadgets he was continually building; he ended up using a sintered-plate nickel-cadmium Size AA battery because, when you start talking about very large capacitance, the electrical characteristics begin to resemble those of a battery or, as the British more accurately descibe it, an "accumulator."

Then, because I manage to get myself on a lot of technical product mailing lists as a result of subscribing to a large variety of technical trade magazines, I got a press release describing a real breakthrough. Sohio Engineered Materials Company's Semiconductor Products Division (P.O. Box 664, Niagara Falls NY 14302) has developed what they call a "Maxcap™ Double Layer Capacitor. If you thought that one farad in a 3-inch by 8.625-inch can was a show stopper, a one-farad at 5 WVDC Maxcap™ is only 1.1 inches in diameter and 0.55 inches high! It was developed to replace ni-cad batteries in providing backup power for computer memories and other ICs. It's essentially a small battery without battery shortcomings. The one-farad unit mentioned above has such a low leakage rate that it will provide 100 microamps at 5 volts for ten hours.

This is getting very close to what the fictional electronic engineer Wesley Farrell developed in Venus Equilateral. 360,000 Maxcaps™ occupying less than 1260 cubic feet will give you 13 farads at 3,000 volts. And you can then proceed to build the rest of the wonderful gadgetry that used this humongous capacitor in the Venus Equilateral story, "Firing Line."

This development a mere forty years after it appeared in the pages of this magazine isn't surprising because we all know that technology progresses on a cubic curve—although I have great difficulty convincing people that it isn't a constant-slope curve.

I chose the title of this column because when science fiction writers create a fictional new gadget or technology, they essentially put their creations on the firing line of development. Some technical reader will either say, "Hey, that sounds feasible if I do thus and so;" or, if the concept happens to be beyond the state of the art at the time, the chances are that it will be remembered—as I remembered Wes Farrell's big capacitor—until the state of the art gets to the point where the gadget can become reality.

Nobody's developed George O.

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Smith's matter duplicator yet. The state of the art isn't up to it. I'm sure that it will be at some indeterminate future date. But, for the purposes of this monologue, the technological reality is irrelevant because we are already in the process of creating the *consequences* of the fictional matter duplicator. George O. Smith stumbled upon these consequences in the process of writing the Venus Equilateral story in which the matter duplicator was developed, "Pandora's Millions," and then began to discuss them in stories. These were *social* and *cultural* consequences.

Smith's matter duplicator produced a society of abundance because anything could be duplicated from any sort of matter. I didn't realize it until I re-read "Pandora's Millions" after I got the press release about the Maxcaps™ and looked up "Firing Line" again: George O. Smith beat Herman Kahn, myself, and Lee Correy's fictional General Anegam Dati Vamori to the concept that we live in a universe of abudance where all we need is matter, energy, and know-how in order to live like gods. (Actually, Robert A. Heinlein said on CBS television the night of the Apollo 11 lunar landing, "There is just one equation that everybody knows: $E = MC^2$. It proves the potentiality whereby man can live anywhere where there is mass.") The final stories in the Venus Equilateral series were far more socially oriented than the initial ones. It seems that once Smith latched onto the duplicator concept, he realized that the biggest problem to be faced by the human race was learning how to be rich.

Smith's technology was rapidly made obsolete by reality. Things happened much faster than he had forecast. This is one of the hazards of forecasting the future *and* writing science fiction. Although science fiction writers are probably better forecasters than the professional futurists and especially the "futurologists," we still miss the boat. I did and probably continue to do so, but I've mentioned this before. Unlike many "futurologists," science fiction writers must write down their forecasts. This is an extremely important caveat of forecasting. To get some idea of a forecaster's batting average, his forecasts must be recorded so that twenty to fifty years later the forecasts can be compared against what really happened. Most "futurologists" conveniently neglect to do this, by the way. And most professional "seers" such as Criswell have an extremely sorry track record. (See *Criswell Predicts*, Grossett & Dunlap, New York, 1969.)

What few people have recognized is that the *social* and *cultural* facets of science fiction are rapidly being made obsolete by reality, too.

In this regard, George O. Smith's fictional matter duplicator turned out to be a convenient bit of fictional technology to support the concept of an abundant future that faces us as we begin to enter the last part of the Kahn Transition to a "post-industrial society." (I don't like the term, but, unfortunately, I can no longer argue it with Herman.)

What concerns me is the fact that few modern science fiction authors are considering anything but downside, catastrophic futures. Who's doing the conceptual work upon which planning for an abundant future will rest? Folks, what happens when we *win*, which we will because we must?

That's where the firing line is today. ■

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on gaming

Dana Lombardy

Star Trek, The Adventure Game is a board game of interplanetary diplomacy within the framework of the popular television and film series ($16.00 at your local store, or direct from West End Games Inc., 251 West 30th St., New York, NY 10001). In the game, you play a starship captain and a representative of either the Federation of Planets or the Klingon Empire. Your mission is to persuade unaligned planets in the star system to join with you—which earns you Reputation Points if they do so.

The game can be played solitaire, or as a 2-player contest. The 40 unaligned planets that are your objectives lie in the Organian Sector of space. The Organians (an ancient and wise, or meddlesome and foolish race, depending on your viewpoint as a Federation or Klingon player) forbid war in this area, and they have the power to enforce their edict. While open warfare is not an option available to you in your efforts to sway planets or stop the enemy from doing so, there are opportunities for sabotage and assassination for the Klingon player. Also, either player can defend his ship or his scouting parties with force if threatened.

The personalities from the television series—Mr. Spock, Captain James Kirk, Mr. Sulu, etc.—are represented in the game by character counters. Other playing counters represent Federation commissioners, Klingon commanders, etc. Many of these counters provide you with benefits based on the personality of the character represented. For example, Mr. Spock has Logic, Science, Telepathy, and Personal Combat skills which can be used when the need arises during play. The character counters are divided between four starships per side, and you use these four "teams" to explore the unaligned planets.

To begin play, the 40 unaligned planet disks are dumped into a container so they can be drawn at random. Each turn consists of Initiative, Movement, Exploration, Political, and Ship Replacement phases, in that order. The Initiative Phase merely consists of determining which player has the most Reputation Points; that player then goes first in the turn.

In the Movement Phase, the first player rolls one die. If a "6" is rolled, a random event has occurred and two dice are then rolled. The paragraph number in the Adventure Paragraph Book that corresponds to the number rolled is then consulted to determine what the random event was. If no random event occurs, the first player may then move any or all of his ships.

After moving a ship, you roll two dice. If the number rolled is less than the number of spaces moved, the ship's dilithium crystals have failed. (Having an engineer—such as Scotty—on board adds "2" to your dice roll and lessens

(continued on page 110)

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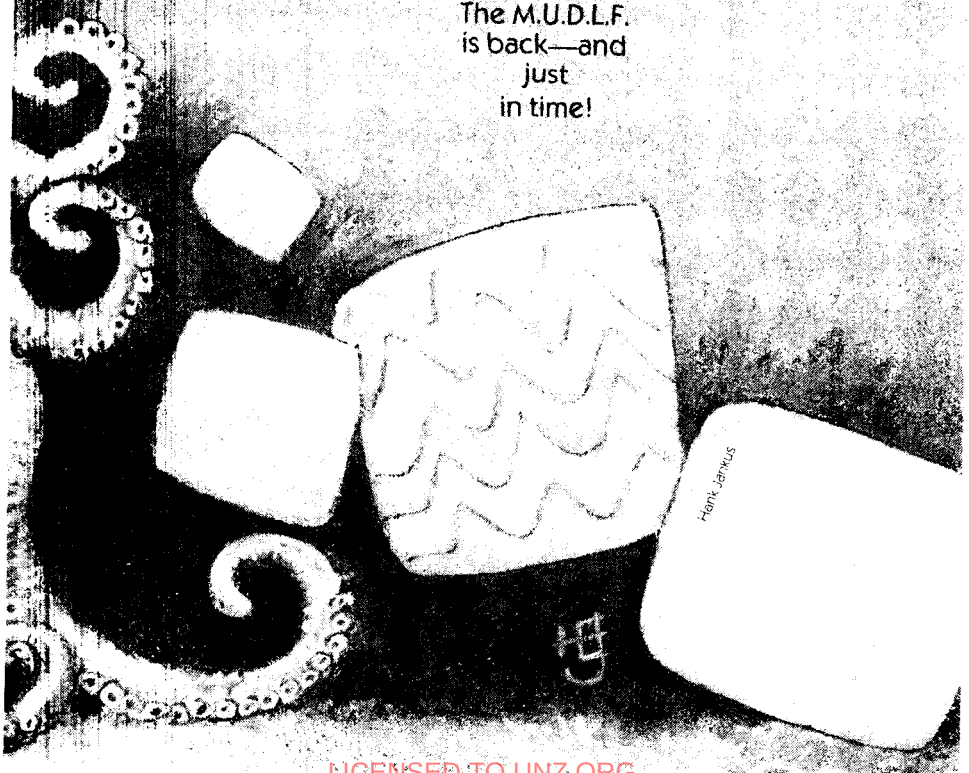
Tom Ligon

A CHRISTMAS ADVERSARY

The M.U.D.L.F. is back—and just in time!



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Nelson Stokefodder, the number one network's programming mogul, awoke with that upset stomach that sometimes accompanies heartburn and acid indigestion. One too many eggnogs from one too many Christmas parties growled up at him from somewhere deep inside his voluminous belly. As he lay awake wondering if the soothing pink liquid or the fizzy foil-packed tablet was the best cure for what ailed him, he heard a faint jingling and scraping from the hall. The sound was vaguely familiar, but he couldn't quite place it. He groaned, rolled over face down, and tried to ignore it. The sound got louder and he tried, with no success, to block it out with a pillow. Suddenly the sound stopped. Nelson sighed with relief and snuggled into his pillow.

"Nelson?" The familiar coarse male voice brought chills to his spine. Stokefodder stiffened in his bed. "Nelson, I know you're awake. Look at me."

Nelson eased slowly up on one elbow and looked toward the door. Without his glasses he could just make out a craggy face and dark hair. "Who are you, and what in hell are you doing in my bedroom?" he bellowed.

"You know who I am, Nelson. I put people through hell for a living."

Nelson fumbled with his glasses for a few seconds, blinked a few times to bring his eyes in focus, then blinked some more, hoping his eyes weren't quite focused. "Oh, no! Not you! Please, what have I done? I'm not a swindler, and I'm not a murderer. I'm not even a politician! I'm just a poor network executive, striving the best I can for Motherhood and the American way! I don't deserve to be ambushed like this."

The face smiled and replied. "This is not an interview, Nelson, but before tonight is over, you're going to wish it were. Look closer."

Nelson looked. He could see the face clearly, but not the body. The face seemed to be protruding through the locked solid oak bedroom door. The figure rattled a bit and stepped through the door. Its body was loosely bound in a tangle of microphones and cables.

"Awe, geezus," Stokefodder groaned. "This is the last goddamn time I run three versions of "A Christmas Carol" in one holiday season. Let me guess, you're supposed to be Morley's ghost, right?"

The grizzled investigative newscaster smirked and nodded.

Nelson kicked off the covers. "When I find the goddam projector and whoever's pulling this prank, it's gonna take a team of top surgeons and a Roto-rooter man to do an exposé on where I'm gonna put the projector."

The fat executive waddled over to the apparition and moved his hand around and through it, looking for a projector beam. He had no luck. "OK," he said as he gave up, "I'm having a dream."

"Of course you're having a dream," Morley replied. "We both know the plot. You'll be visited by three spirits who'll take you backward and forward through time. Aside from the theoretical difficulties involved, do you have any idea what the energy costs would be? We're interested in salvaging what little there is of your mind, Nelson. We certainly aren't going to warp time and space into a knot over such a trivial thing when a simple dream will do."

"Say what?"

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"Besides," Morley continued, "just because this is a dream doesn't mean I'm not real."

Nelson frowned. "Nothing in a dream is real."

Morley looked thoughtfully at the ceiling. "What is reality, anyway? Something you perceive in your mind? And what is a dream? Really, Nelson, what difference does it make, as long as we cure you?"

"Cure me of what?" Stokefodder growled. "I'm no Scrooge. I'm a generous man! I keep Christmas very well."

"Oh, that you do, that you do," the apparition answered, nodding. "We have no quarrel with that. You bring joy to little children, and to advertisers, and to merchants, and to credit card companies. You make millions happy. That's not why we're here. We'll get to that later. First, I must convince you that I am real."

"That's going to be a little tough."

"Perhaps. I happen to know you're into dream management. If that's so, why don't you just take control of this dream and turn the tables on me."

Stokefodder cleared his throat. "Ah . . . actually . . . ah . . . I've been trying to do that since I got out of bed."

"Good, Nelson, good. So now you know that you can't do a thing about me. You may be in control of yourself, but you can't just wish me away. When's the last time you couldn't control a dream?"

Stokefodder began to look worried as he thought back. "Ah, not since I was five, maybe six years old."

"Um, hm," Morely nodded. "Now I, on the other hand, control everything in this dream except you. For instance, I can turn this room into an inferno." Morley snapped his fingers. The room burst into raging orange flame, and Nelson howled in agony.

"Hot, wasn't it?" Morley asked as he waved his hand and the flames disappeared. "Here, a little ice will help." He waved his hand again and a bone-chilling blast of wind swept through the room.

Nelson dove for the bed and rolled himself up in a blanket. The apparition stepped to the bedside and snapped his fingers. The wind stopped and the temperature returned to normal. "Well, Nelson, when's the last time you had a dream with such intense pain?"

Nelson was wide-eyed. "Never," he croaked.

"That's right, Nelson. Most dreams are visual, and damned few ever have intense sensations. Convinced yet?"

Nelson studied his kneecaps. "There has to be some logical explanation. You can't be a ghost. You're not even dead!"

Morely pressed his fingers together in preparation for another snap. "You still want to argue abut it?"

Nelson shook his head.

"Of course," Morley said, looking thoughtful again, "there is another possible explanation."

Nelson looked up hopefully.

"It could be that a sophisticated band of technological terrorists, the Most Uncommon Denominator Liberation Front, has sneaked past all the guards and dogs and alarms on this estate, slipped into your room, anesthetized you, wired electrodes to your pointy little head, electronically stimulated you into a hypnotic trance, and is putting

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this whole brouhaha into your mind by a combination of laser holography and hypnotic suggestion. What do you think?"

"You're a ghost."

"Good boy. Now, we both know what comes next, don't we? Be a dear, won't you, and pay attention to what the three spirits tell you. It really is for your own good."

Morely departed in a puff of smoke, leaving a faint odor of sulphur behind. Nelson sat dumbfounded on the edge of his bed for a few minutes, then stepped over to the door. It was locked, and the key was missing. He ran to the window. It was stuck. He tried the intercom. Dead. He ran to the bathroom, but the door to the empty adjoining bedroom wouldn't budge. At last he rested, panting, on the edge of the sink. He looked at his fat pink face in the medicine cabinet mirror, and watched in horror as it dissolved into the gaunt, stony face of a spirit.

"Mind stepping back from the mirror, Nelson?" the spirit asked as it began crawling through the glass.

Nelson flattened himself against the opposite wall. "Ed! Geezus! What are you the ghost of?"

"I'm the Ghost of TV Past, of course," the little man answered as he stood on the sink with his arms crossed and his shoulders hunched. "You didn't think this little shew had anything to do with Christmas, I hope."

"What else am I supposed to think?"

"Of course," the spirit went on, "we haven't actually determined that you do think, yet. No, Nelson, we're taking advantage of the upcoming midseason shakeup to try to save your mortal soul."

"I see," Stokefodder said, relaxing a bit. "So you're here to show me how great television was in the old days."

The spirit shook his head. "Would that it were so. Alas, the only thing better about old television was that it never had specials reminiscing about how good the shows were in the good old days. Follow me. The first segue is through the wall past the john."

Nelson followed cautiously as the spirit stepped over the sanitary fixture and through the wall. Of course, Nelson had seen people walk through walls on television many times in the past, but he had never stopped to think what it would be like to do it. Would you see the inside of the wall as you stepped through? What if a nail got in your eye? Would it hurt? He took a deep breath and forged ahead over the tank. Everything went blank, and he stepped into a wing of a black-and-white studio stage. A thousand black-and-white people were applauding as a black-and-white singer trotted into the spotlights and began to sing about a houn' dawg.

Nelson smiled and turned to look at the spirit. "I grew up on this guy. You know, we ran a special on him about a year ago."

"I know," the spirit replied. "I've been meaning to talk to you about that. Now, meaning no disrespect for the dead, being one of the above myself, but, what did this kid do to rate so much attention from the media? I mean, why not do a special on Gregor Mendel, or Alexander Fleming, or maybe James Gadsden?"

"Who are they?"

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The spirit sighed. "Nelson, that's the point. Those people I named made important contributions. They, and thousands like them, changed our world. People should know about them, and they would if you program executives would tell them."

Nelson shook his head. "Ed, you know as well as I do that people aren't interested in dusty old history. They'll turn it off. If you want ratings, put that kid on."

The spirit looked sad. "Nelson, when I put the kid on, he was new and exciting. When you put him on, he was a sorry piece of dusty old history."

The singer finished and the audience went wild. The spirit stepped on stage applauding politely, and Nelson followed. The audience broke into uproarious laughter and the spirit whipped around.

"Nelson, you idiot," the spirit snapped. "Do you think you're invisible or something? You're still in pajamas, your fly is unbuttoned, and this is live. Get out of here before the cameras notice."

Stokefodder retreated to a dark corner behind curtains and rigging while the spirit introduced the next act. The spirit finished and stormed back into the wings. "Do you realize how close you came to getting my show canceled?" the little man bellowed. "I had to fight like heck with the censors to get that kid on, even with just a chest shot."

"Sorry, Ed," Stokefodder said sheepishly. "But you have to admit television has come a long way. There's hardly any censorship anymore."

The spirit folded his arms and stared at Nelson. "Isn't there? Think about it. Listen, Nelson, I've got a shew to finish here. Go through that door and down the hall to the third door on the right. There'll be someone waiting for you."

Nelson navigated down the corridor, opened the door, and stepped cautiously into the darkened room. He heard someone breathing nearby. "Somebody wanted to see me?" he asked.

"Orgukmx. Yazzmk greenk grina," said a high-pitched voice. Nelson reached for a light switch, turned it on, and immediately wished he hadn't. Before him hunkered a slimy looking reddish-brown blob holding one of its tentacles over its six eyes. "Fezppla dauunn wok," it said.

Nelson stood petrified as the creature fiddled with an instrument. It spoke again. "Sorry, Nelson, I forgot to use my translator. I'm Skrrena Dorkummaz, but you can call me George. I'm the technical consultant for this little dream you're having."

"Are y-y-y-you an a-a-a-alien?" Nelson stammered.

"Why, yes. I suppose from your point of view, I would be. Of course, from my point of view . . . oh, let's not confuse the issue." The creature pressed a button on the instrument, and the room filled with swirling lights. "I just put us in fast forward," it explained.

The lights subsided and revealed a shooting session in progress. The alien chuckled as Nelson ducked for cover. "Relax, Nelson. I always travel invisible. I fixed it so they can neither see nor hear you. Damned difficult in real life, but simple in a dream." The alien turned his attention to the set. "I just love this sitcom," he said with a giggle.

Nelson studied the set for a few sec-

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onds. "This isn't a sitcom. This is a dramatic series about a family whose spaceship became disabled and they became lost in—"

"Don't say it, Nelson." George cut him off. "As a sitcom, it works. Take that robot, for example. Unreliable. Slow. Clumsy. Occasionally obstinate. Possibly useful at serving ice cubes, but not much more with those manipulators. Nevertheless, with weight at a premium, they brought it along. Hilarious. And then there are the people chasing it. The script calls for aliens. What *I* see are aliens. What do *you* see?"

"Humans in grease paint," Nelson moaned.

"Speaking English," George added.

"I know, I know," Nelson replied. "I've heard it a hundred times. But with their budget and production schedule, they couldn't develop creatures, and there isn't enough time in each episode to hash through learning a new language. The audience will turn the set to another station if you don't keep things moving. By the way, speaking of realism, what are you doing in my dream? Are you the Ghost of TV Present?"

"Look, pot, don't criticize this little kettle's carbon deposits," George snapped. "You've butchered a few literary masterpieces yourself, you know."

Nelson grinned. "Defensive little blob, aren't you?"

The creature curled up a tentacle. "I taught Morley how to snap. Care for a sample?"

Nelson declined, and George pressed the button to advance them through time again. This time the lights faded to reveal a darkened computer room with a lone figure in a black body stocking slinking between the tape drives.

"The script," George announced, "says this is the fastest and most modern computer in the world. Why is it that every time you people show a large computer, you put these damned clunky obsolete tape drives in the scene?"

"So people will know it's a computer," Nelson responded. "Those new machines don't look like computers."

"Ah, I was beginning to wonder if you'd ever actually *seen* a computer. Watch this. The funny part is next."

The slinking figure in the scene typed four characters on a terminal: WHY? The computer began to churn furiously, bleeping and spinning its tape drives.

George snickered. "I'd give my third tentacle to meet the bozo who wrote that operating system. Watch. It gets better."

Smoke began to belch from the computer's innards, followed quickly by brilliant explosions and showers of sparks."

"Oooooh, I can barely stand it," George trilled, stamping his six squat little feet. "Hasn't anybody in this industry ever heard of circuit breakers? Come on, let's get out of here before I bust." The little alien pushed the fast forward button again.

The scene settled in a laboratory where a couple was listening to a young man in a white lab coat. The fellow was pointing to words on a blackboard as he spoke.

"I just love the premise for this one," George said. "Two or three of this couple's friends get brutally murdered every week. If it were up to me, I'd have them investigated, but nobody in the show

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seems to think that statistic is peculiar. This week someone's trying to steal a secret flavor formula for dog food. That's it on the board. Ain't it a riot?"

Nelson looked at the "formula." "Looks OK to me."

George jumped and looked up at Nelson. "What?!! You mean you'd feed laundry bleach to your dog? You're more of a monster than I thought."

Stokefodder frowned at the creature. "Listen, I get this crap all the time. I know this stuff isn't accurate. It doesn't have to be. Nine out of ten of the viewers out there can't tell the difference. The tenth viewer is watching public television."

"Mmmm, that's so," George acknowledged. "But did you ever consider why the average viewer doesn't know any better? The poor slob spends most of his free time watching this excrement. I see this all the time. You love to put pseudoscience in your shows, but you don't want to do your homework. Good technical advice isn't hard to come by, if you'll take it. Don't you think you at least have a responsibility to present intelligent shows filled with correct information?"

"My responsibility is to the stockholders," Nelson replied indignantly. "My job is to make our programming successful, to keep the ratings up. To do that, I give the public what it wants."

"You mean you give the public what it liked in the past," George countered. "You keep using the same old tired plots because you don't think the public cares about new ones. I understand. That's why we're using this tired old plot on you. If we used a new one, it might go clean over your head."

Nelson scowled. "At least we keep mixing things up."

George raised his six eyebrows. "I know all about your little 'plot by the numbers' scheme. Backfired, didn't it?"

Nelson's face flushed. "Ah, well, uh, nobody's supposed to know about that. Yeah, we use a computer to predict ratings based on plot elements, and it works pretty well, too. We just can't get reliable predictions of what ads will work with what shows. Never have figured out why. Someone must have screwed up. I still think the idea is sound. Sure, we know what works, and we stick with it. If it ain't broke, don't fix it."

"So, you don't think anything is broken?" George asked. "Back on the road, then." He pressed the fast forward button again.

A wicked looking spacecraft swooshed past as the swirling lights died away, banking hard as its wings cut through the vacuum. Another ship was hot on its tail, blasting away.

"It keeps getting better and better," George snickered. "The ship in pursuit is piloted by robots. Now, if I'd built 'em, they wouldn't need but one shot. Of course, if I built 'em, they'd communicate in nineteen hundred baud binary instead of stilted English. I also wouldn't use hominid forms as pilots; the ship itself would be the robot. If nine out of ten people believe automated weapons are this ineffective, it's no wonder they haven't agreed to build ballistic missile defenses yet. Nelson, why is it that all of your science fiction is kiddy shows?"

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"Because that's what science fiction is, fantasy for kids," Nelson growled.

"I had hope," George sighed. "Your network started this season with a terrific series about life on an O'Neill colony orbiting the L5 point. Why did you cancel it?"

"Like I've been telling you, lousy ratings," Nelson replied.

"But you changed the schedule four times in three weeks, and you didn't promo it! Even the producer didn't know when it would air. For the last show, you had it on opposite the favorite kiddy show of all time, the one with the guys who end each week's show with a machine-gun battle in which nobody is ever hit. The L5 show was intended as adult drama. You should have put it on at nine or ten."

"Look, it got its chance," Nelson grumbled. "They had three whole weeks to build up an audience. Like I said, we know what people watch. The show was just too different, and we knew it before we put it on. They placed third every week by as much as a whole point! We stuck our necks out, and we pulled our necks back when we heard the blade start to swoosh. Finis. Done. I don't want to hear any more about it."

The little alien waved its tentacles around in despair. "Nelson, I really do believe you're hopeless. I could drag you around all night watching this stuff, but I suspect I'd rot my own brain long before you wised up. To hell with it. Next stop, the present, and then I'm dumping you."

"And good riddance," Stokefodder mumbled as the lights began to swirl.

The lights subsided in a large comfortable-looking office with framed diplomas and certificates on the walls. An aging gentleman in a cozy-looking old sweater was seated behind a desk talking to a young boy. The boy's mother sat tensely nearby. Nelson studied the scene.

"Who are these people, and where are the cameras?" he asked.

"This is real life," George answered. "No wonder you don't recognize it. The young boy is named Timmy."

"Of course," Nelson groaned.

"Timmy's mother is upset over his behavior," George continued, "So she brought him to see Dr. Chisholm, a child psychologist."

"Umph. And you wonder why we shun realism. So what?"

"Timmy," Dr. Chisholm said cheerily, "next we're going to play a word association game. It's a lot like one they play on television. I say a word, and you tell me a word it makes you think of. Ready?"

"Oh, boy! Yeah!" The tyke leaned forward onto the desk.

"Greedy," the psychologist said.

"Businessman," the youngster replied without pause.

"Industrial."

"Pollution."

"Bulletproof."

"Helicopters."

Dr. Chisholm stopped briefly to take a note. "Flying."

"Motorcycles."

"Brainy."

"Cars."

Dr. Chisholm raised an eyebrow and took another note. "Technology."

"Threatening."

"Scientist."

"Deranged."

"Bedtime."

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"NO!"

"Hmmm," Dr. Chisholm said as he took another note. "Timmy, you'd be great at that game show."

"Did I get them all right?" The child's eyes lit up.

"One hundred percent," the psychologist answered. "Absolutely predictable. You don't have an original thought in that tousled little head of yours, do you?"

The boy smiled and shook his head in an enthusiastic "no."

Dr. Chisholm took another note and turned to the boy's mother. "Mrs. Krachette, just how much television does Timmy watch?"

The woman stopped wringing her hands long enough to answer. "Oh, we're very careful of that, doctor. We never let him watch more than six hours a day. Except, of course, on weekends."

"I see." The doctor reached into his desk and brought out a bundle of paperbacks and a slip of paper. He began to write. "Mrs. Krachette, I'm writing a subscription for Timmy."

"You mean prescription, doctor."

"No. I mean a subscription. To *Analog*. See to it that he takes at least one story or article for each hour of television."

"Before or after?"

"Preferably instead. Since this case is so advanced, I'm loaning you my copies from last year until your order is filled."

"You're so kind, doctor." The woman took the magazines and the slip of paper and hurried her son out of the office. George and Nelson stepped through the wall and followed.

In the hall, she looked at the form. "Ack, what a waste of money. What is this? Science fiction!" She tossed the bundle of books down the hall as if it were infested with scorpions. "Come on, Timmy, let's go home and forget this quack."

Nelson looked down at the creature. "George, why did you show me this? It isn't television's responsibility to raise kids. That's the job of parents and schools, and the Lord knows I pay enough taxes for schools. Television has a responsibility to maintain a full broadcast schedule. I can't help it if the parents make us the babysitters."

"Maybe not," George replied, "but you sure as hell could do a better job of babysitting."

"If you'll pardon my saying so, humbug. That woman should raise her child better. If she doesn't, it's no concern of mine."

George glowered at Stokefodder with all six of his eyes. "Nelson, I could give you the 'No man is an island' speech. Instead, I'll give you the facts. Timmy is your nephew."

"Oh."

George and Nelson watched as the mother and son scurried down the hall, then stood in silence for a moment. Finally George turned to Nelson.

"I think I've finally got you figured out, Nelson," the alien said sadly. "It isn't that you just don't give a damn about people."

Nelson started to protest, and George pressed a button on the instrument. Nelson froze as a clammy stasis field closed around him, barely allowing him breathing room. The alien continued. "That's partly it, but only a small part. It isn't

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even that you have no regard for the intelligence of the public. I think your biggest problem is that you have no respect for things you don't understand. That body of knowledge, Nelson, encompasses damned near everything but ratings and market shares. My problem is, I really don't know how to help you, and I'm really not sure I want to. I do think there is one thing, though, that you respect more than anything else. What happens to you next is entirely your own fault."

George pressed another button, and the lights began to swirl again. This time, though, they formed a tunnel with thousands of branches leading off at right angles. Nelson was alone, falling helplessly, always down, even though he kept being sucked into side tunnels. Each tunnel lead down into blackness, even when the turns should have taken him back up. Nelson was screaming when he finally fell into a totally black chamber.

The fat executive panted as he lay on the cold, hard floor. He felt like something was watching him, but it was too dark to see. He worked up his courage and whispered, "Are you the Ghost of Television Yet to Come?"

He was answered with a click and a flash of light. In front of him a projection television screen glowed to life, silhouetting a gaunt, black, hooded figure. Nelson squatted, too scared to move or speak, staring at the cloaked form. It slowly turned away from him and faced the screen, raised its arm, and pointed its bony hand toward the glowing expanse. Nelson could barely see the object it held. There was a click, and the screen sprang to life.

A voluptuous girl in her twenties stood behind a huge mahogany desk barking orders to her groveling but scheming minions. They carried out her wishes to the letter, continuing to build her vast business empire while she seduced and dumped one virile young competitor after another.

The hooded figure moaned and raised its arm again. There was another click, and the screen changed.

A game show appeared in which the parents of young upwardly mobile professionals were enticed to reveal embarrassing moments in the lives of their children. The reactions of the yuppies were shown on split screen. The yuppies then got their turn to embarrass their elders, and the family winning the most audience votes for tactlessness won a two-week vacation together in Hawaii.

The hooded figure wailed and raised its arm again, jabbing its thumb into a button on the object it held with a vicious snap.

A detective show appeared. In a five-minute chase scene, the hero wrecked the cars of fourteen innocent bystanders, sent twenty bullets flying down city streets, and caused a gas station to explode, burning out seven nearby small businesses. The alleged felon got away, and the hero vowed to catch him if it took the rest of the show. The program broke for an insurance commercial.

The hooded figure covered its eyes with one arm and punched up another show.

A dramatic series appeared in which two characters, presumed killed in earlier episodes, mysteriously reappeared in the same episode. They got into a squabble while riding in a Mercedes

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diesel down the Pacific Coast Highway and crashed through a barricade and over a cliff. The vehicle burst into flame in mid-air and plunged into the sea. Neither body was found.

The figure screeched and punched the device again. The screen went blank.

"Hey," Stokefodder protested. "Turn that back on. I thought those were pretty neat!"

The figure spun around and pointed the device at Nelson. Its hand shook and its eyes glowed like ruby stars deep within the hood. Nelson scrambled away. The Spirit of Television Yet to Come calmed slowly and turned again to the screen. It pressed the button.

A woman was sobbing, her head face down on a dining room table. Behind her a television was visible, its screen dark. A black shawl was draped across it.

A second woman wearing a housecoat and curlers hurried into the room. "Oh, Judy!" she empathized, "I just heard. How did it happen?"

The first woman raised her head. Her eyes were puffy and red, her face was a puddle of tear-streaked makeup, and her hair was a tangled mass. It took a moment, but Nelson recognized her as an older Mrs. Krachette. She choked back her sobs, coughed, and gasped for breath before she spoke. "We gave poor Timmy a car for his birthday." She wailed again as her voice deteriorated to a squeak. "We never would have done it if we knew he learned how to drive from television."

The other woman looked horrified. "Judy, no!"

Judy sniffed and wiped her eyes, struggling for control. "Yes. They say a car pulled out in front of him. Instead of hitting his brakes, he stepped on the gas and tried to jump his car over one of those little wedge-shaped Fiats." She broke into tears again and buried her face in her hands. "They say he would have lived if he'd worn a seat belt, but none of his heros on television ever did."

The spirit turned and glared at Nelson. Nelson glared back. "If the damned government would make the car companies put air bags in cars, these things wouldn't happen," he grumbled defensively.

The spirit continued to stare until Nelson couldn't stand it any longer. The fat executive stood and marched over to stand face to face with the ominous harbinger. "OK, Little Black Riding Hood," Stokefodder growled, "How would you run the network? Huh? Tell me! Tell me how I change things for the better. The guy I replaced tried to change things for the better, and our ratings slumped to a poor third. You can't make those morons sit still for clever shows. They like to see cars blow up. They like to see shootouts. They like to see a world full of sexy young people. They don't want to think, they want to be entertained. So you tell me, what choice do I have?"

The spirit stared silently for a minute, then spoke softly. "What choice, Nelson? Didn't you see the way you came here? Each side tunnel represents a decision you could make, and each one leads to a viable and different Future. The path you took was the easy one. Always down. Always predictable. There are countless others, but I waited for you here."

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A dim light filled the room, revealing stacks of manuscripts rising in walls as far as Nelson could see. The spirit raised his arms. "This, Nelson, is the slush pile. These are the manuscripts, the screenplays, the television scripts nobody would read. They are the pilot episodes rejected by your computer. They are the ideas that lost in the competition for limited airspace, for a finite number of published pages, for too few theaters. But, Nelson, there is no lack of talent here, and the pile grows by thousands of stories a week, at least half of them better than what you put on. There are Tolstoys, Dickenses, Clemenses, Shakespeares in there. Do you know, Nelson, why they never make it from paper to the rare earth phosphors under glass across the nation?"

"Because they're boring," Stokefodder grunted, "or because they're so highbrow the viewers won't stand for it."

The spirit shook its head. "No, Nelson. There is no room for them because you run two spinoffs of every successful show. You run three or four shows by the same production company, sometimes one after another, and all based on the same formula. The production companies know this, and try to make shows just like the ones already on. They are scared to try something new, scared to risk the enormous investment of producing a pilot your computer will shoot down. They produce shows formatted to allow celebrity guest appearances to boost the rating, rather than developing scripts good enough to create new celebrities."

Nelson looked at his feet.

"Scrooge asked me if there were any options," the spirit continued. "Of course there are. Here's one I like." It turned to the screen and pressed the remote control.

A typical game show appeared, but with contestants seated along a bench of computer terminals. The moderator read a question. "OK, Mrs. Hawkins, housewife and mother of two, for one thousand dollars, what is the mass of the asteroid Hermes? You have fifteen seconds to find the answer on your terminal."

Mrs. Hawkins typed furiously for a few seconds, then smiled. "Two point four pico-earths, give or take."

"That's correct!" the announcer pealed. "Now, for the sum of ten thousand dollars, how much impulse would be required to inject Hermes into a Hohmann transfer ellipse from its current mean orbit to Earth's mean orbit? I want the answer after this word from Databases International."

"Kee-rist!" Stokefodder exclaimed. "You expect a housewife to be able to answer that?"

"For that kind of money, it sounds fair to me," the spirit replied. "I suppose you want to pay ten kilobucks to someone for knowing the year such and such a hit record came out?" The spirit shook its head. "Besides, the problem isn't that hard. Hundreds of housewives could do it."

"Hundreds of millions can't," Nelson countered.

The spirit nodded. "Sure, but imagine the respect they'd feel for one who could. Might just get them curious about their own capabilities. Just imagine the possibilities."

Nelson got wide-eyed. "Yeah! A dis-

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aster epic about a housewife who trys to splatter Earth with a giant asteroid. I love it."

"You're hopeless, Nelson. How about a series about capturing an asteroid, parking it in a gentle orbit above Earth, and mining it? Do you have any idea of the resources one asteroid could contain, or what it could mean to humanity?"

"No."

"I thought so," the spirit said with a sigh. "So your viewers will never know either. George is right. There is only one course left open to us." The spirit raised the remote control again and tuned in another scene.

"That's my office," Nelson noted. "Hey, what's that old cleaning lady doing picking through my stuff?"

The spirit said nothing.

"Waitaminnit," Nelson snapped. "This is the scene where Scrooge learns he dies unloved, right? Well, I don't give a damn about what people think about me after I'm gone."

The spirit said nothing.

A wimpy little man in a lavender scarf and pants with blue glasses, shirt, and shoes pranced into the office and plopped behind the desk. He stretched out in the big leather chair, frowned, and punched the intercom. "Miss Briggs, have someone re-upholster this chair. That fat tub of lard collapsed the springs."

Nelson was redfaced. "Why that ungrateful little cow-pie! After everything I've done for him, that little fart calls me a tub of lard."

The spirit said nothing.

Another man appeared at the door and leaned against the frame. "How ya like yer new digs, Jonesie?"

Jones looked around and nodded. "I think I could get used to it." He smiled and chuckled.

"What's so funny?" the man at the door asked.

"Just remembering the look on old Stokefodder's face when the security guards dragged him out of the building, kicking and screaming."

"What?" Stokefodder gasped. "Canned? Why?"

The spirit said nothing.

"Damn you, tell me! Don't clam up on me now!"

The spirit said nothing.

"Please! Tell me!"

The spirit turned slowly to face the quivering mass of flesh kneeling before it. "Promise you'll listen this time instead of making excuses?"

Nelson nodded vigorously.

"You have not been singled out for special treatment," the spirit said. "We are visiting many network executives, and we find that many of them are ashamed of the shows they've been fostering. They will cut to the heart of the problem. They will dig out the stories that are both exciting and informative. They will insist on originality, and they will strive to inspire. In doing so, they will find a curious effect. The viewers will be inspired, slowly at first, but surely. They will gain optimism for the future, and that effect will be felt in the economy, in academics, and in politics. They will change the world. You know it is so, Nelson. You know the power of your medium. Once the audiences learn to think, the old shows will never work again. There will be a viewer revolution, and those who stand in its way will be swept aside."

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The spirit turned away and walked slowly to the screen, then into it. As it faded into the distance, the scene faded to black, leaving Nelson feeling alone and frightened.

"You can sleep now, Nelson, sleep," Edwin Morris said soothingly to the quivering, corpulent blob lying on the bed beside him. The blob relaxed. "Enjoy your nap while you can, though, because when you awake, you have important things to do. You have shows to cancel, and replacements to choose. You know what depends on it."

"How's he doing?" Cheryl Owen whispered as she packed a piece of equipment. Her silver gray hair barely showed under the black stocking cap she wore. Both she and Edwin were dressed for skullduggery.

Dr. Morris glanced at an oscilloscope equipped with a telemetry receiver. The transmitter was clipped to Stokefodder's pajama pocket, and leads ran to his chest and face. "Eye movement has stopped. He's entering deep sleep. He needs it. He's going to feel like hell when he wakes up." Dr. Morris carefully peeled the electrodes from his subject's fat face. "OK, Cheryl, let's not forget anything."

Cheryl scanned her list. "Antennas?"

Dr. Morris glanced at a nylon pack and swept the room with his eyes. "Packed."

"Comlinks?"

"Check."

"Projectors, screens, and extension cords?"

"Check, check, check."

"Cameras, microphones, and cables?"

"Three checks."

"Biomonitors, leads, and supplies?"

Dr. Morris zipped the bag shut on his instruments. "All packed."

"Cleaned all electrolyte paste from subject?"

"Done."

"Singed his hair and eyebrows?"

Dr. Morris sniffed and grinned. "Nice touch, that."

"Reset his alarm clock?"

"To oh-four-thirty. He'll know for sure he didn't do that."

"Put slipper-prints across toilet?"

"Oops, I knew we'd forgotten something." Edwin grabbed Stokefodder's slippers and scurried into the john.

"That about does it," Cheryl said, slipping the list into her pocket, "except for burning a bit of sulphur and sneaking back out of here." She pulled a small tranceiver from her purse. "Hopeful spirit to sentinels. All clear?"

"Sentinel one, roger."

"Sentinel two, roger."

"Sentinel three, affirmatory, good buddies."

"Dream Ship, all clear here."

"We'll be out of here in about a minute. Hopeful spirit out."

Dr. Morris finished wafting an incense burner of sulphur around the room and slung two bags of equipment over his shoulders. Cheryl was waiting for him by the door, wearing gloves to prevent fingerprints. They slipped quietly into the hall, locked the door as they had found it, and crept carefully out of the quiet house.

Fifteen minutes later they stepped into the Dream Ship, a huge motor home equipped as a portable studio and laboratory. George was cuddled up in an

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open trunk with half a dozen latex masks and other paraphernalia. Logos on the cameras read "Starship Enterprises." A dozen technicians and actors were relaxing after their hectic night. "How'd things go down here?" Dr. Morris asked.

The paramedic answered. "Scary there for a minute. We could have killed him with that time tunnel fall. He hit a rate of two ten and his blood pressure was *way* down."

Dr. Morris gave a long whistle.

"We cut it short," the paramedic continued. "He came back to normal, and I don't think we did permanant damage, but next time we gotta be more careful."

Dr. Morris nodded. "OK, and we'll be sure we steal a medical history for our next victim, too. How'd the rest of it go? Did he throw you people any curves?"

The Ghost of Television Yet to Come tossed back his hood. "I've done lots of improvisations in my time, but that was a trip."

The special effects technician lifted her weary head from the console. "I'll say! I've never had to ad-lib a special effect before. How many more of these gigs are we in for?"

"As many as it takes," Dr. Morris answered. "Or until we get caught. I don't even want to think about the public backlash if that happens."

The ghost stared thoughtfully at the studio. "Do you really think it will work?"

Dr. Morris smiled. "You people had him shaking there at the end. Besides, if you didn't convince him, he's bound to check and find out that Joan and Timmy Krachette really are relatives of his. The videotape Dr. Chisholm gave us was icing on the cake."

"Not that," the spirit said, shaking his head. "We're pros. We could convince a bull to give milk. I mean the crap about changing the world by changing television shows."

Dr. Morris shrugged. Cheryl perked up. "And if we don't, have we made things any worse? Besides, a girl can dream, can't she?"

Edwin glanced at his watch. "Well, we'll know in a few minutes how it went. It's almost four-thirty now. Is the tap set on his telephone?"

The audio technician nodded. Everyone fell silent. At four thirty-one and twenty-two seconds, a dial tone blared over the cue channel speaker.

A number bleeped, then the phone rang ten times. A groggy male voice answered. "Yeah?"

"Murray, this is Stokefodder."

"Wha?"

"Listen, got a pencil? I got things I want you to do."

"At four thirty in the morning?"

"Listen, Murray, we're twenty years late already. What was that show about space we canned last fall? You know, the one you were so hyper for."

"Earthglow, by Starship Enterprises. Why?"

"We're putting it back on."

"When?" Murray sounded excited. "What slot? How soon?"

"Pick a turkey you can't stand, Murray," Stokefodder said with a chuckle. "We'll dump it. You've got better taste and more good sense than the rest of us put together. And meet me at the office in an hour. We got work to do. By the

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way, how'd you like Jones's job? I'm firing his decadent ass."

A champagne bottle popped softly in the rear of the motorhome.

"Yer kiddin? What'd he do?"

"Never mind that, but he's out, and so is that damned computer of his. You want the job? And the pay?"

"Sure!"

"You got it. See you in an hour." Click.

Cheryl passed out tall, elegant champagne glasses, the best she owned, and filled each with liquid sunlight. "Ladies and gentlemen, I know we've still got one hell of a lot of work to do, but I'd like to propose a toast. Here's to the Most Uncommon Denominators of this world, and their Liberation Front." ■

ON GAMING

(continued from page 93)

the chance that the crystals will fail.) When a ship's dilithium crystals fail, it may only move two spaces per turn (three spaces with an engineer on board).

To repair dilithium crystals, the ship must reach a friendly base, or a "AA" class world in the player's home area or Organia. After one turn, the crystals are assumed replaced and the ship may move normally. During the Movement Phase, bases that have been destroyed may also be repaired.

In the Exploration Phase, the first player draws a planet disk at random and places it on one of the unexplored star locations on the map where he has an undamaged ship. On the back of the disk is the name of the planet. The second player then reads aloud the description of that planet from the Paragraph Book.

After reading the description of the planet, the second player then rolls a die to determine which of the three paragraphs listed for that planet will be read next. The second player then turns to that paragraph and reads it aloud; he informs the first player of possible actions listed which the first player may perform, some of which may be influenced by the skills of the characters in the first player's exploration party. After the first player makes his decision, the second player turns to the indicated paragraph based on the first player's decision and reads aloud the result of the player's actions.

In the Political Phase you can use commissioners (Federation) or agents (Klingon) to influence the political status of planets. Agents may also attempt to sabotage ships or bases, or attempt to assassinate commissioners.

Finally, in the Ship Replacement Phase, players may try to replace ships that have been destroyed during play.

This is a very entertaining game, especially if you enjoy the television and movie series. But you don't have to be a "Trekker" to have fun with the game; several nice touches are thrown in, such as commissioners (notoriously inept egomaniacs) pulling rank and taking command of a starship. If that happens, the Klingon player decides what the Federation player's option is.

This is an excellent solitaire game, and many of the paragraphs that determine play are cleverly written. Whether you prefer to explore with the starship *Enterprise*, or want to expand the influence of the Klingon Empire, West End's *Star Trek* is recommended. ■

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Jay Kay Klein's biolog

New writers just don't pop into existence out of thin holes in space; they've been grown molecule by molecule over a period of some years, such as Thomas A. Ligon, Jr. who first appeared anywhere in the September, 1984 *Analog*. He was born in Richmond, Virginia, where he attended high school.

Tom became one of the few persons at the Virginia Polytechnic Institute to secure a BS degree in Biology and Electrical Engineering Technology. Employers were so taken with the idea that a brand-new graduate could actually start laying hands on things right off instead of merely having a head full of theory that academia decided to terminate the program after only a few classes. Tom is an Engineering Technologist in Falls Church, VA. He's the man who devises an often one-of-a-kind piece of equipment or special set-up and sees that it functions as planned.

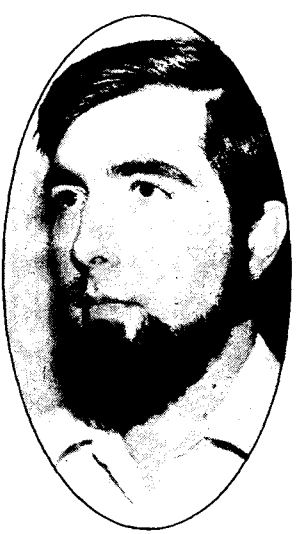
His job requires just the sort of broad-spectrum background that writing science fiction also does. He has studied microbiology, health physics, biomedical engineering, instrumentation, digital electronics, communications technology, and delved into research on chemical kinetics and mass spectrometry. His employer is in the testing business, everything from toasters to you-name-it industrial machinery. A recent job called for detonating explosive charges over strain-gage instrumented plates.

As expected, outside interests include practically everything in the field of science, along with politics, social issues, and just plain gadgets, including that ultimate conglomeration, the L-5 space habitat. Here on Earth, he also likes to ride motorcycles if not at orbital speed then over very rough terrain.

Readers almost always come to science fiction early in life, but Tom almost didn't make it; he waited until his fourth year of college before encountering a Heinlein novel. While thematically interesting, much of what Tom read in the field seemed lacking in scientific reality. He decided to produce the sort of things that he preferred, such as also found in the hard science writings of David Brin, David Palmer, Arthur Clarke, and Larry Niven.

On his word processor, Tom's plots seem to thicken spontaneously and his characters run away with the action, resulting in much more complicated stories than originally intended. Like Doc Smith, who used to have his stories critiqued by science fiction fans before writing the final draft and Larry Niven who gets factual and imaginative input from scientific advisors, Tom has a close friend serving these functions, a master chemist and an expert on science in general, and of course a long-time *Analog* reader. ■

Tom Ligon



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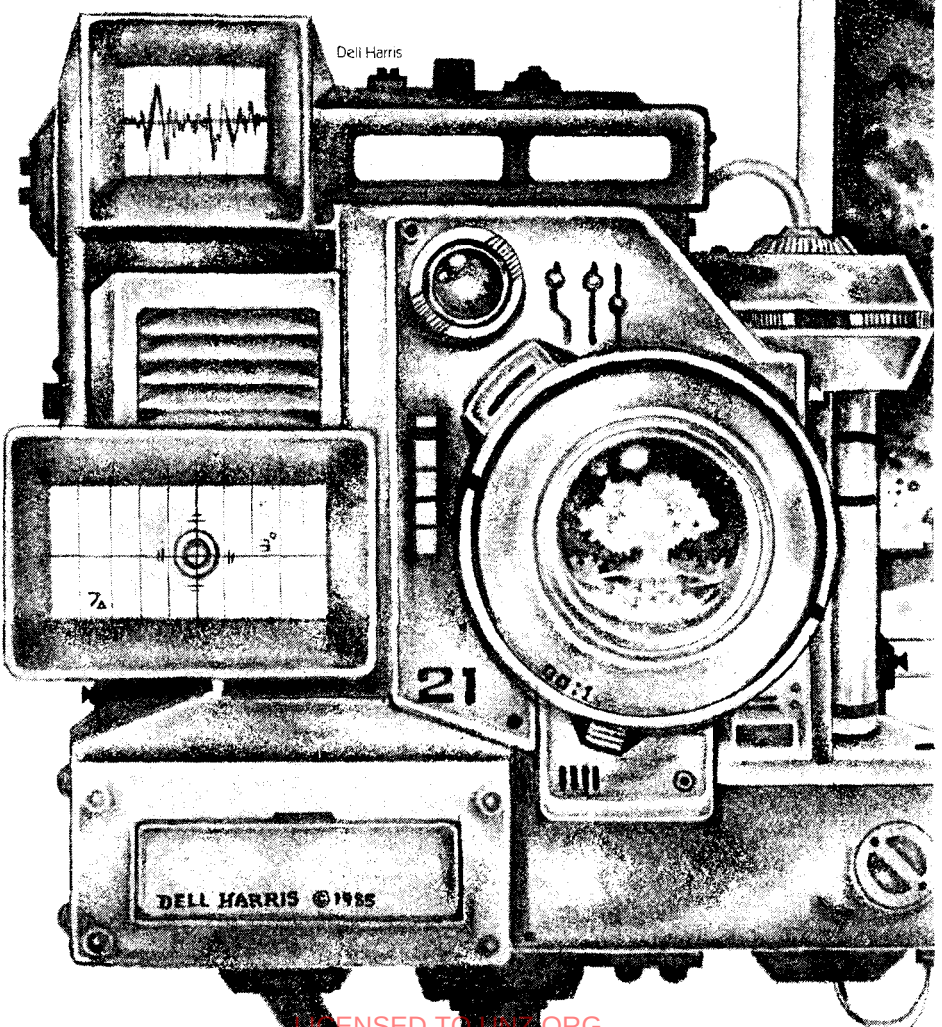
"And, what *is* the nature of the soul, exactly . . . ?" Father Amos Rand, S.J., Ph.D., rested his forearms on the lectern and allowed his eyes to roam over his class. His gaze halted upon a student whose sagging eyelids indicated a need for involvement. "Mr. Davis. Perhaps you'd care to enlighten us with a 'scientific' opinion?"

Kendall Davis pushed himself to his feet, cursing quietly under his breath and wishing exotic evils on the deans who made taking (and passing) at least three philosophy courses a requirement for all majors. Even majors in theoretical physics.

Davis was in no mood to become involved. "Yes, Father. There isn't one," he answered and sat down.

Rand stared unhappily at Davis. "Mr.



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P. M. Fergusson

SNAPSHOT OF THE SOUL

Some areas have traditionally been considered outside the domain of scientific research. If they are ever brought inside that domain, researchers will have to expect to learn things they had never suspected. . . .

Davis, for a student whose major requires precise thinking, that was a remarkably muddy statement. Do you mean that there is no such thing as a soul, or that it has no nature, or what?"

Davis sighed and got slowly to his feet again. "No sir. I mean that there can be no such thing as a 'scientific' opinion on the nature of the soul. Science only concerns itself with those things which it can, in some way, measure and analyze. Since no one has developed tools to measure, or even demonstrate the existence of a soul, science cannot express an opinion on the subject."

"Very good, Mr. Davis. You are quite correct—knowledge of the soul is

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a matter of faith and intuition—not science.

"Now to get back to the original question . . ." A coed squirmed as his eyes found her. "Miss Lauren."

Ken Davis had a recurring nightmare that evening. In it, someone was judging him and finding him wanting. "Kendall Davis," the someone kept telling him, "in you, a soul is wasted. You're never going to be good enough to make it into Heaven, or evil enough to warrant Hell. You're not even sure you have a soul. Therefore, I am removing your soul and giving it to someone who'll appreciate it."

At times the someone judging him was God; at others, Davis's father. At still other times it was Monsignor Carvil, who had attended to his youthful religious education with a catechism and a ruler.

"But if you take my soul then when I die, I'll be gone—a nothing!" he cried in his dream.

"You should have thought of that sooner," the someone told him uncompromisingly, and reached out to take Davis's soul away from him. Davis always woke at this point, struggling and sweating.

For a young man who had been raised Roman Catholic, and who was in the process of questioning religious teachings in their entirety, it wasn't an unusual dream. That didn't make it one bit less disturbing. Somehow he was going to have to prove, if only to himself, that there was a soul.

The next day found him in Father Rand's office.

"Kendall, I'm not a physicist," Rand told the worried young man sitting across the littered desk.

"But you *are* a mathematician, Father. You've got to have some understanding of the field. Besides, you're a priest. If anyone should be able to give me some idea of where to begin—of what I might be trying to measure—you should."

"Kendall, men have been trying to prove, or disprove, the existence of God and the nature of the soul for centuries, and the only even *remotely* acceptable proofs have been purely ontological. God and the soul are not *of* the physical world, so you can't use physical tools to detect or measure them."

"Damnit, Father—" Kendall paused, blushed, and continued, "Pardon me, Father, I . . . uh . . ."

Rand laughed. "I was a chaplain in Viet Nam, Ken. I've heard much worse . . . Besides, unless it's meant as a true curse 'damn it' isn't a sin, simply socially questionable. Now, you started to say?"

Davis gave the priest an embarrassed grin and went on, "If I've learned anything from studying physics, it's *don't assume*. And I think the accepted concept that God isn't physical is an assumption with absolutely no foundation. Particularly when we know that what we *can* see and measure—even with our *best* instruments—is no more reality than what we see with our eyes and ears."

Rand laughed. "Seeing with your ears . . . that's a novel concept." When Davis began an embarrassed retraction, Rand held up a hand. "Not all *that* novel. Music can create visual images in the mind, and any blind man can tell you about 'seeing' with hearing. Any-

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way, I get your point. In fact, you just may have given yourself your starting point."

"Huh? Could you explain?"

"Sure. Wave mechanics might be a good start. If the soul *is* in some sense physical, or has a physical component, it would have to exist—at the fundamental level—as a matrix of wave forms—just like everything else in the physical universe. Find a way to 'see' those fundamental wave structures, and you may get a look at the soul."

Davis thought for a long time before he answered slowly, "Yes. It would have to be, wouldn't it. But, detecting such structures—let alone measuring them—with the resolution needed to yield meaningful results? Wow. So far all we've been able to do is theorize. And those theories describe such phenomena in some very abstruse mathematics."

"You didn't expect it to be easy, did you?"

"Not really. But I was sorta hoping I could develop a tool, or tools, to do the job. Now I realize I'll have to develop the tools to develop the tools through lord knows how many levels."

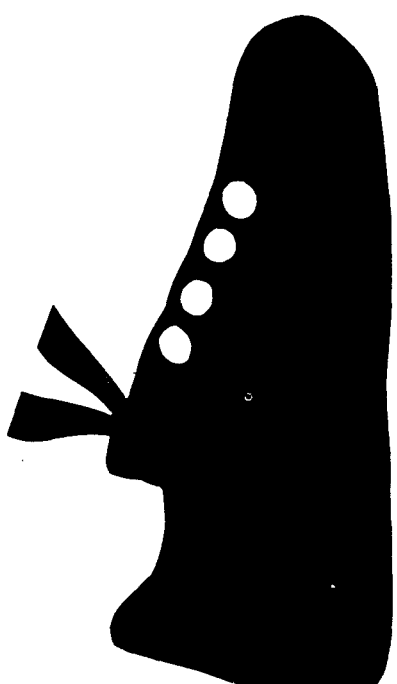
"God rarely makes things easy that are really worthwhile, Ken."

Rand paused then continued, "You might look into Kirlian photography, auras, psychic transmitters, etc. It seems to me that I recall a gadget being patented . . . Oh . . . thirty, or so years ago, that was supposed to work—though nobody knew why. Someone used it to control insect populations, of all things."

Davis chuckled, "Father, for some-

jog your mind

run to your library



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one who doesn't know much about this subject, you sure seem to know an awful lot."

Rand grinned at Davis. "The curse of an inquiring mind, Ken. That's why I'm a philosopher, not a physicist. I never learned to specialize."

Davis made some brief notes, listing the subjects Rand had mentioned, then leaned back with a wry expression. "It sure looks like a long road. I suppose I can tackle the background for my master's and start doing some real research while I'm working on a doctorate—if I can dig up the money to get that far."

Rand reached out and gently laid a hand on Kendall's arm. "I'm sure God will provide. He usually does when the work is worthwhile."

Davis gave Rand a slow grin. "It *would* be nice if I could depend on help from that quarter."

Rand pointed a chiding finger at Davis. "Ken, never count on Heavenly aid to the point of not working to make your own chances. I said God *usually* helps. I did not mean to imply he was going to do the work for you—or even make it easy. Easy, it won't be. There is going to be a lot of opposition to the research you're proposing, and it will be on any number of grounds—from impractical to heretical, or even sacrilegious. You may even have to bury the real work in some other project."

Rand patted the crestfallen Davis's arm consolingly. "Remember who the opposition is. A scientific proof of the existence of a soul would certainly *not* be in *his* best interests. That one *likes* to have people doubt the existence of anything transcendental about man."

For a moment Davis showed his youth and expressed his skepticism. "Come on, Father," he said. "No one believes in the classic Satan anymore." Then he hesitated in embarrassment as Rand gave him an amused look.

Rand shook his head and chuckled. "No I guess they don't. Not even I. But no one denies that evil exists. It's the flip side of the coin. If one accepts God as being all good, then one must admit that something very potent stands in opposition to him. As to the true nature of either God or Satan, that is a matter for theologians to argue about —not scientists. Personally, I've always thought such arguments were exercises in futility. I doubt than any human mind can apprehend the reality of such beings—or could survive the experience if it did. Look at what a relatively minute exposure did to Moses."

Davis nodded. "So, don't worry about what I can never hope to understand, huh?"

Rand nodded. "And, do your absolute best in developing understanding of what you can." Rand pushed his chair back, stood, and stretched. "Now scram. No matter how fascinating this is, I have other, more mundane things to take care of. Like getting these tests graded."

Davis rose and headed for the door. As he opened it Rand said, "Keep in touch, Ken. This is one project I'd like to see yield positive results."

Davis gave him a wry grin. "Don't worry, Father. I'll need a lot more help and advice from you before I even *begin* to get anywhere."

Rand returned the grin. "If I can, I

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will. Now, git."

Davis got.

"It was simple, Father; absurdly so, once I looked at the problem the right way." Dr. Kendall Davis pushed the sheaf of computer print-outs across the desk to Rand. "The clue was in auras. Why can't most people see them? Why can others, and how?"

"Right answers frequently *are* simple," Rand commented. "I take it that this is the answer." He riffled the four inch thick stack of a computer print-out. "*This* is simple?"

Davis laughed. "The concept is. The math is a witch."

Davis pointed at the print-out. "Of course, that also includes the design math for a crude detector mechanism—an aura camera—sort of."

"So give me the concept. I'll tackle the math and engineering when I have a few minutes of spare time."

"A few minutes? Right. You and which Cray-3?" Both men chuckled, then Davis continued, "I knew the aura had to be something physical. Not only do some people *see* it but the blind can *feel* it—if feel is the right word. A blind man can *sense* when another living organism is nearby—and where it is. Watch a blind person negotiate his way through a greenhouse, sometime. I did. It was a revelation. The main question was 'what were they seeing or sensing and why can't everyone do it.' "

Rand interrupted, "Are you saying that animals and plants have souls? If you can demonstrate that, you are going to make a lot of people very, very upset."

Davis shrugged. "Most Oriental religions have felt that to be the case for centuries. Christianity has simply assumed the opposite. The Bible is essentially mute on the point. Once it's proven, The Church will adjust to the idea as easily as it has to other scientific revelations."

Rand said grimly, "Which has often been not very easily at all." Then he chuckled and added, "The fundamentalists will go straight up the wall."

Davis laughed his agreement then went on, "At any rate, the answer to the question of seeing auras is that everyone *can—if* they are trained. I used my sabbatical to get that training."

Rand nodded. "I suspected something of the sort when you applied. Not many theoretical physicists on a sabbatical would choose to study India's nuclear program."

Davis shrugged and grinned. "They should. The Indians have some rather unique approaches—including using Kirlian techniques to monitor their reactors. I rather suspect that they feel the reactor is really a controlled demon—they may have a point."

"You mean that your detection device is a sophisticated Kirlian camera?"

"Not at all. I only wish it *were* that simple. Kirlian cameras photograph the *effect* of the aura on an electro-magnetic field—not the aura itself. The aura appears to be something else altogether. It interacts with the normal, four dimensional fields—but exists ninety degrees to those fields."

Rand stared at Davis. "A five dimensional field?"

Davis gave Rand a wry grin. "It would seem not. The research indicates that it's four dimensional . . . Damn! This having to refer to four dimensions

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bothers me. Mathematically, everything we work with exists in an unknown, and very large, number of dimensions. But if I don't want to start getting into some rather rarified math, I'm stuck with *talking* about four." Davis shook his head in frustration and Father Rand chuckled in commiseration. Davis continued, "Anyway . . . The aura—the soul, if you will—seems to exist outside of the temporal framework, but adds a reference dimension unique to itself."

Rand spoke slowly as he asked, "But if it exists outside time, how does it . . . Grow? Change? Evolve? Or does it . . . ? How could you . . . uh . . . photograph something like that?"

Davis laughed at Rand's bewilderment. "You're a mathematician and you're asking me? However. It does change, but it doesn't appear to—uh—age." Then he dropped the bombshell. "Not only doesn't it age—but—it continues to exist after death. *And*, we can prove it—with video tapes—of a sort."

Rand leaned forward and fixed Davis with his stare. "You're sure?"

Davis nodded.

"How? If it doesn't exist in the temporal . . . how?"

"The miracle of modern electronics and nuclear biology, Father. We discovered that the sensitivity to the aura is in the DNA coding. That gave us our detector, synthetic DNA. We— uh—heterodyne the pattern of the aura picked up by the DNA—rotate it ninety degrees electronically—and voilà—we have a video image of the soul. The real trick is going to be integrating a standard video image with the aural image so that a coherent, understandable picture of the entire scene emerges."

Rand was incredulous. "You've actually tried this?"

"With a crude prototype—yes. But without the correlating normal images it's difficult, if not impossible, to prove what we're seeing. There's still an enormous amount of refinement and testing to be done. I want to make it as unchallengeable as possible before I publish." Davis rose. "And I better get back to it."

Rand walked beside Davis to the door. "You'll do it Ken. I have no doubt of that." For a moment a shadow of worry crossed Rand's face and he laid a restraining hand on Davis's shoulder. "Be careful, Ken. There are a lot of people who would be just as happy to have the existence of a soul remain unproven."

"Don't worry, Father. I will be."

It took just over two years.

Rand laid aside the copy of *Time* he had been reading as Ken Davis entered. Rand's expression was one of concern.

Davis gestured at the copy of *Time* and at his craggy features prominently displayed on its cover with the caption "Taking Snapshots of the Soul." "I wish I could have kept it quiet longer, Amos. I really do. It's still far too soon and there are too many questions yet unanswered."

"Relax Ken. I know you didn't ask for this, but it had to happen sooner or later." Rand told him.

Davis pulled over a chair and laid a video tape and a package of photographs on Rand's desk. "Anyway, this—" he tapped the tape in emphasis, "—was what I wanted to see you about. We

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took these at a local hospital—with the approval of the patient, the doctors handling the case, and the relatives.

Rand's hand trembled as he removed the photographs from their envelope. Then an expression of shock spread as he looked at the picture of a man, obviously extremely ill, lying in a hospital bed. "I know this man!"

"Dr. Hennings. A loss to the scientific community. As you know, he died last week of terminal cancer. He's the one who really perfected the camera. When he found out he was dying, he decided he would be the ideal first subject. His last contribution."

"A great man." Rand said and crossed himself, bowing his head in silent prayer for the departed soul.

Davis nodded at the pictures. "Those are normal Polaroids we took for control. The video tape is taken with the new apparatus. After you see the tape you'll be praying even harder." Davis pointed to a video-tape machine sitting on a roller stand in a corner. "May I?"

"Yes. Certainly."

While Davis loaded the machine Rand looked at the rest of the Polaroids. The photographs were like the first except that they recorded the steady deterioration of the physicist Hennings through the moment of his death.

"Ready, Amos," Davis said. It was half a question and half a statement.

Rand laid the Polaroids down and nodded.

Davis pressed the "play" button. The scene was similar to the photographs: grainier, less distinct, but clear enough that there was no question of it being the same man in the same sterile hospital room. The major difference was the appearance of the dying physicist.

Surrounding the body of the man was a strong blue glow, lightly veined with reds and yellows—the aura. As death approached the aura was rippled as if by a strong wind, then abruptly, it seemed to draw in on itself, the red and yellow veining fading. "He made his peace with God just then, I think," Davis said quietly. The aura remained quiescent, barely visible, for several seconds—then—with a near audible snap left the body and hovered above it.

"My God . . . it *is* Hennings." Rand breathed. Even though the image was blurry there was no doubt that the intense blue shape was Hennings.

For a moment it hovered, slowly turning, as if looking about the room. Then it paused, briefly, as it appeared to glance at the body it had so recently left. It looked straight at the recording camera and raised a nebulous blue hand in salute. Finally the soul (for Rand had no doubt that was what it was) seemed to turn in an unexplainable direction and go away. It didn't get smaller, or dimmer. It just *went*, in a manner the mind refused to record.

Davis reached over and shut off the video player. "That's it."

Rand sat silent for a very long time. "You *have* done it. That tape proves, beyond any question, that there is a soul and that it survives intact after death."

Davis leaned back in his chair and smiled in satisfaction. "It certainly seems to, doesn't it?"

Rand considered the now blank screen in thoughtful silence.

Davis studied him. "Amos, you look distinctly unhappy. I'd have thought this

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would at least warrant a smile."

"It does, Ken. It does. But, in my spare time I've been going over that pile of math you dumped on my desk two years ago. I've come up with something that disturbs me more than this pleases me."

"You found an error in the math?"

"No. I wish I had; but there's no error. Look . . ." Rand pulled out the now dog-eared computer printout. He opened it to a section heavily overwritten with marginal notes and began pointing out equations. "This section relates to the fundamental structure of both the soul and the universe."

While Davis scanned the equations Rand brought out another sheaf of printouts. "Now, these equations are from a recently published study on conditions at the wave front of an atomic explosion. Notice the equations involving the areas near where the reaction is still taking place and compare them to your own."

Davis scanned the equations, compared them, then repeated the process. He made notes, and entered data on Rand's desk terminal. At last he fell back in his chair and breathed, "Oh —my—God!"

Rand looked at him sadly. "I'd hoped you might get a different result."

"I can't believe it. The initial atomic reaction distorts and realigns the fabric of the universe to the point where *anything* caught in that reaction field is literally annihilated. It damps fast, of course, since the reacting mass rapidly becomes sub-critical; but that's no consolation to anything living that happens to be in its path. An atomic explosion will actually *destroy* a soul caught within . . ." He stared in horror at the computer screen. "No. It can't be. There *has* to be some error."

Rand's voice sounded hollow as he said, "There isn't." He shuddered and added, "Not only have we proved the existence of a soul; we've also demonstrated how to destroy it."

"But, that's impossible!" Davis protested. "The soul is immortal."

Rand shook his head. "Actually, there are several passages in the Bible, particularly in the *Apocalypse*, that can be interpreted to mean that a soul *can* be destroyed. Immortality does not necessarily imply indestructability. Christianity merely assumed that it did. This evidence says that the assumption was in error."

For several minutes Davis and Rand stared at each other in stunned silence. When Davis broke the silence his lips were twisted in a grim smile. "There is a positive side to this. Once this data becomes widely known, *no* country will dare use an atomic weapon against a living target."

"Yes . . ." Rand said sadly. "But, I'm afraid accomplishing that is going to cost a great deal in lives—and souls."

"I'm sorry, Amos." Davis shook his head in puzzlement. "I don't follow your reasoning."

"Ken, there are a lot of very powerful people who are going to try to destroy that information. People to whom lives or souls are less than nothing."

"You're implying that they'd nuke this area to destroy the data? No, Amos. I can't accept that."

"This area, and any other where the data might be stored. Ken, you're for-

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getting who the *real* opponent is. To him, the annihilation of a few hundred souls would rate no more than a brief chuckle."

"No one would risk nuclear holocaust just to keep the existence of a soul from being proven," Davis protested.

"No, they wouldn't risk bombs or missiles," Rand agreed. "A nuclear accident would be as effective—and not too difficult to stage. Then, with the basic data and the equipment gone, the published test results would be easy to discredit."

"No, Amos. God wouldn't *permit* it! He *couldn't* allow the absolute destruction of a soul."

"He already did, Ken—at Hiroshima and Nagasaki, and, if you include nonhuman souls, at every atmospheric test before and after."

Rand paused, mentally framing his next statement. "I told you once, a long time ago, that the nature of God was beyond human understanding. The same applies to His reasons for allowing some things to happen and not allowing others. We can observe; we can theorize; but we can never apprehend the why."

"Then we have to get the basic data disseminated as fast as possible."

Rand nodded. "I've already sent copies to a number of colleagues. I fear, however, that it may not be enough. There are experimental reactors at any university with a computer big enough to handle this data."

Davis shook his head. "Reactors aren't bombs."

"No, but the materials at most of the experimentals can be turned into bombs. Damn big ones in some cases."

"Amos, what else *can* we do?"

"I . . . don't . . . know." Rand's voice sounded weary and skeptical. Unconsciously his fingers searched, trying to ease the constriction of a clerical collar. A collar which had long since disappeared in the flurry of *relating to your congregation* of the sixties and seventies. "Perhaps . . . if we pray for an answer—"

It was already too late. The blast came as they knelt. ■

● Space is a sea without end which washes on countless strange and exotic shores; where the conceivable forms of the living and the dead are greatly outnumbered by the inconceivable; where the known is lost in the unknown; where new dangers hide in undiscovered shadows in unimagined forms; where new goals can challenge and new beauty and wonder can inspire the spirits of all people . . . for all time.

Dandridge MacFarlan Cole, 1964
Submitted by G. Harry Stine

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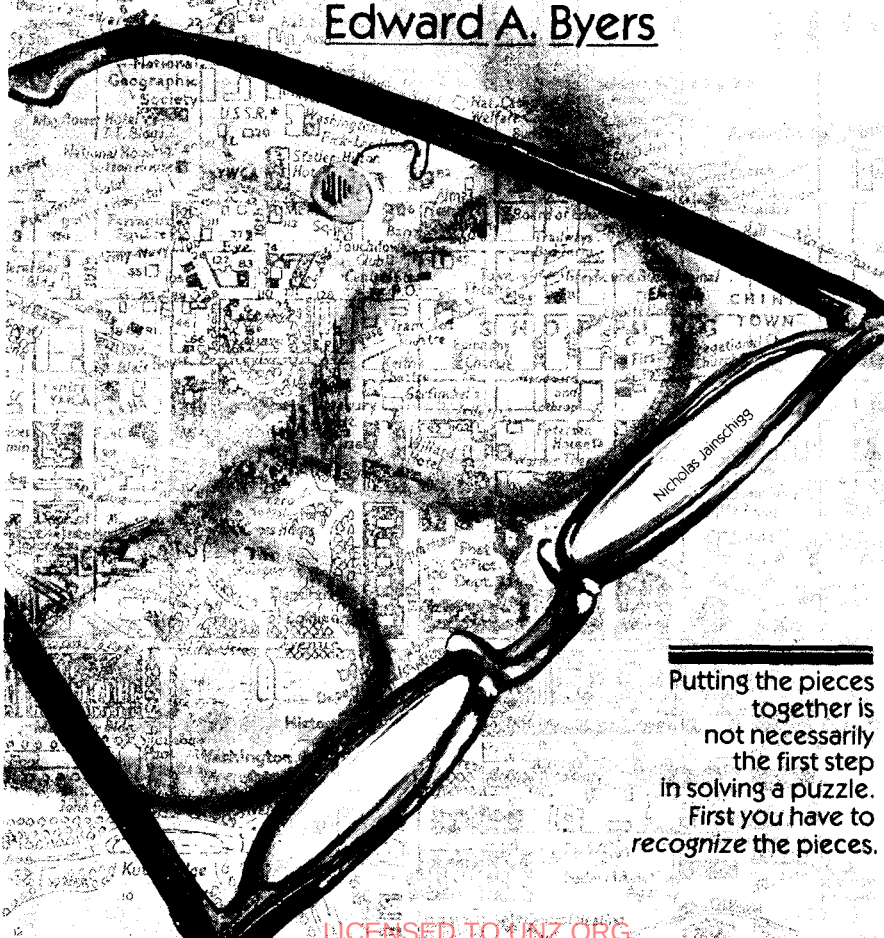
THE VICIOUS CIRCLE

Edward A. Byers



Putting the pieces together is not necessarily the first step in solving a puzzle. First you have to *recognize* the pieces.

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"I don't know why people live in Washington, D.C. in the wintertime. The humidity is terrible! *Weather mavens don't talk about the wind-chill factor, they talk about the* bone-*chill factor."*

WRXL Radio

Sergeant Anthony Amaddio leaned forward and with one massive finger flicked stalactites of ice off the parking lot fence. "This is no goddam place to die," he muttered loudly, staring at the body on the snow-covered macadam. He struck the fence sharply, angrily, breaking free another half-dozen dagger-like icicles.

"No *way* to die, either," said the blue-eyed man named Sam something-or-other. Amaddio hadn't quite caught the last name. He'd come from some agency out in Maryland, one that Amaddio had never heard of. Maybe they knew something he didn't. Amaddio scratched his bearded face and scowled. He hoped so; he'd been a detective with the Georgetown police nineteen years, and he'd never seen anything like *this* particular murder.

The man in the snow was well dressed, about forty, with a huge beak of a nose and tanned, well-defined features. He was wearing a soft fedora hat, expensive-looking gloves, and sported a thin malacca cane—it was lying near his outstretched right hand. He had been strangled, evidently with a chain: there were link marks on his neck. There had been considerable force used, too—the larynx was crushed—but as far as Amaddio was concerned, that wasn't the mystery. The mystery was that the man's footprints were clearly visible in the light snow. *But his assailant's were not.*

The man named Sam had not touched the body, only circled it warily at a distance of three feet or so. He did not touch the piece of paper lying half crumpled under the man's left arm. He did not have to, it was loose enough to read: *S.B., 9 P.M. 3rd fl.*

"We've called my people, not yours," Sam said, stopping, then glancing at the detective. "The *city* police aren't coming. Okay?"

"Hell no, it's not okay," Amaddio retorted with vehemence. "He's murdered in my town—in my precinct."

"I'm not trying to ruffle any feathers," Sam said with what might have passed for a smile. "Glynn was doing some important work for us. We have a propietary interest in finding out who did it."

"Somebody with damn long arms," Amaddio muttered under his breath. He stomped his feet and blew on his hands. So—*Glynn.*

"You noticed it too, then." Sam's eyes were full on the detective, seeming to measure him.

"Well hell, it's pretty hard not to notice something as strange as *that,*" Amaddio replied with a snort. "Man gets out of his car, walks fifty feet across new-fallen snow, gets strangled with what looks like a tire chain. Only the chain's disappeared—and the strangler with it. Damned clever, I'd say. He doesn't seem to have left any traces."

"Any guesses?"

Amaddio considered the situation anew, shrugged.

"A wild-ass one. Maybe the assailant followed him, walking in Glynn's foot-

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prints. Then, when he was through, he did the same thing in reverse." He said it with an air of total disbelief.

Sam walked away from Amaddio, shaking his head sadly. He resumed his slow circling, this time walking widdershins. "That won't hold up, I'm afraid. Glynn struggled when the chain went around his neck. You can see where the snow's been kicked up." The man paused for a moment when his circle brought him back to Amaddio. "And, as you can see, Glynn was a big man, about a hundred ninety pounds. The killer wouldn't've been able to stay in Glynn's tracks while he was struggling."

"You asked for a guess," Amaddio rumbled with bleak humor, "not a goddam solution."

"Who'd you say found him?" Sam asked, shivering, poking his hands into his coat pockets.

"Paperboy bicycling along over there," Amaddio said, pointing at the alley that ran parallel to the parking lot. "He saw the body, called in from a restaurant about six blocks off M Street." He stopped, glanced with interest at the other. "How did *you* hear about it?"

"We've been looking for him," Sam said as though that explained everything. "We heard the call come over the police radio."

"Why were you looking for him?"

The man didn't answer. Instead, he said somberly, "Go home, Sergeant. You can't do anything here."

Out of perversity, Amaddio shook his head. "Hell with it. I'll wait until forensic gets here."

"Suit yourself." Sam squinted into the middle distance, breathed out a dragon's plume of moist fog, hunched his shoulders against the cold, against the wind that had suddenly picked up. Then, whistling, he resumed his slow circular walk.

Dr. James Lewis, first and only director of Task Force Project Meridian, rested his skinny elbows on the dark wood of his desk and stared over half-moon spectacles at the two operatives he had summoned. Outside the huge bay window spring sunshine scattered itself over a near quarter-acre of rose bushes and shade acacias.

"I don't think you know Charity Welles," Lewis said. His eyes speared Sam Taverner, flicked to the gaunt sculptured face of the woman seated to his left. "She's with Meridian now . . . on temporary assignment."

Taverner, thin and blue-eyed, looked at the woman.

Christ, the thought crossed his mind, *she looks half starved, like she needs to maybe stay a night in a steakhouse . . . or two or three. And those eyes . . . scared. . . .*

"Charity will be taking over the Glynn investigation," Lewis remarked formally. He laced his fingers, cracked a knuckle, stared for a moment at Taverner's blue silk tie. "Got anything new—to give her a leg up?"

Taverner blinked a few times at his superior and sat straighter in his chair. Though he was angry, he managed to contain it.

"Hell, no."

"Nothing at all?"

"I beat my brains out for three months on Glynn," Taverner said with a pained shrug. He shook a cigarette out

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of a pack, lighted it, then sucked at it thoughtfully. "All I've got to show for it is a lot of dead ends."

"No pun intended, I take it." Charity gave him a thin smile, her expression equally pained.

"What about that city cop?" Lewis asked, ignoring the by-play. "Whatsisname. Is he still working on it?"

"Tony Amaddio? Yeah—he's one stubborn man. But *he* doesn't have anything, either."

"Charity doesn't know very much about Meridian," Lewis said into the ensuing silence. "But she checks out medium-high on the WALES Index. Take her down to the lab and get her outfitted, then fill her in on Glynn."

"She's been cleared, I suppose."

"She's been cleared."

"Right." Taverner stood up the same moment the woman did, and as he turned they almost collided.

"Whoops . . . sorry!"

The woman gave him a crooked smile, but didn't back away. She simply stood there while Taverner sorted things out and took a step to the side. *Half-starved*, Taverner mused irritably, *and damned independent. What'n'hell are we coming to?*

The laboratory was located in the basement. Taverner unlocked the steel door, ushered the woman through.

"Why do they call the project Meridian?" Charity asked.

"Little 'm,' " Taverner remarked easily. "Means 'the highest point of development'—or so our leader says."

"Oh."

"How'd you get sent to us, if you don't mind my asking?" Taverner inquired. He selected one of the plastic lab chairs, spun it around on its casters, and settled himself comfortably.

"I am . . . *was* a crypto-analyst," Charity Welles said. "Our section closed down about a month ago." She looked around the lab curiously. "They gave me some tests and sent me here."

"The Weinburger Attribute Latency Examination Series," Taverner said, rising, then stepping around Charity and switching on a coffee maker. "Or WALES to us inmates." He permitted himself a wry smile as he measured water into the appliance.

"What attribute is it supposed to measure?"

"They didn't tell you?"

"No one told me anything."

"Psi," Taverner said, raising his eyebrows, watching her reaction. "Not your ordinary garden variety psi, either. We're talking real, measureable levels." He paused, scratched the back of his hand. "Of course only one in maybe 10,000 has a high enough Index to be useful."

"Good God! Telepathy?" There was a surprised look on Charity's face.

"Nope. Something Lewis calls *psi-Q*. It's a stepchild of information-synthesis." Taverner grinned, shrugged, "I didn't come in very high on the Index, so I don't know *exactly* how it works. But I've seen its effects."

Charity folded her arms and leaned against the wall. She looked at the Task Force agent, her eyes faintly luminous. "Okay, you've piqued my interest. What are the effects?"

"A scenario would probably be best," Taverner said, shooting her a glance. He located two cups beneath the lab counter, placed them side by side in

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front of the coffee pot. He paused a moment, puffing out his cheeks, considering. "About a year ago there was a rumor the Soviets had developed a specific strain of bacteria—one that chewed on uranium ore and concentrated fissionables. We found out their man was to attend a seminar in Belgrade and sent an agent in. A bio-physicist, as it happens, who was trying to do the same thing."

"I suppose he scored high on the Index," Charity murmured from against the wall.

"You're damned right he did—a record at the time. We called him the Prince of WALES. Anyway, he nosed around, picking up scraps of information." Taverner stopped, pulled another cigarette from his pocket, lighted it. "He never found out anything *directly* that bore on the problem, but it wasn't necessary. Six months later he'd developed the critter in his own laboratory."

Charity made a face. "What's the kicker?"

Grinning, Taverner said, "The Soviet scientist wasn't even close to building such a bug."

"*Psi-Q*. Very clever. So we steal information that people don't even have yet?"

"That's basically it. Point is, though, the information can be heuristically deduced, as our esteemed leader is fond of saying—*only* if there's enough random data to synthesize from."

Taverner decanted two cups of coffee and passed cream and sugar. As Charity took her cup, Taverner's eyes traveled from her shoes to her short blonde hair and the simple black hair band that seemed so oddly out of fashion.

With just a little *more meat on her she might be passably pretty*, he thought, and caught her eye. He flushed, took a wrong-to drag on his cigarette, and started a coughing jag that left him momentarily helpless.

Damn the woman!

"What about Martin Glynn?" Charity asked, holding her coffee cup with both hands. She left the sanctuary of the wall, appeared to study the spines of reference books shelved randomly in the glassed-in bookcase.

Taverner recovered his composure quickly enough, stubbed out his cigarette. He took a deep breath. "Glynn's research work was in material science. Crystal structure, that sort of thing." He paused. "Matter-of-fact, he won an award for that the same night he died. He liked to freelance, you see. Wouldn't follow our directives."

"Oh?" Charity turned to face him. She looked interested.

"It's all in the file," Taverner said, shrugging thin shoulders. "I'll get it for you later. Right now, I want to show you the CES equipment." He unlocked a cabinet at the far end of the lab, came back holding a pair of horn-rim spectacles.

"CES stands for Cranial Elektroson Stimulation," he said, turning the spectacles over in his hands. There were thin wire filiments embedded in the frames. Attached to them were three small metal buttons. "And in case you're wondering," he remarked conversationally, "this is *not* a new discovery. The Russkies have been interested in CES since before World War II. Only our application of it is new."

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"What do *they* do?" Charity asked dubiously, pointing to the buttons.

"They generate a square wave." Taverner told her with an air of high drama. "Of a very particular amplitude. It's engineered to travel right through your frontal lobes into your brain stem."

"Ye Gods!" Charity gave him a horrified look and put aside her coffee cup.

"It's not quite as bad as it sounds." Taverner grinned. "The human skull is a poor conductor of electricity. The amount of electric current actually reaching your brain cells will be minuscule." He paused. "And anyway, the current used is only about a milli-ampere. The worst that can happen is that you'll fall asleep on us."

"Is that what happened to Glynn?" Charity's nostrils dilated. She gave the Task Force agent a suspicious glance.

"He was used to wearing them," Taverner said, his voice neutral. "His mind wasn't dulled. Quite the opposite."

Charity slipped on the glasses, adjusted them for fit, and then shrugged her shoulders. "I don't feel anything."

"You won't—it's set below response threshold. Anyway, you wear those . . . and take one of *these*." He held up a bottle containing aspirin-sized tablets.

"What are they?"

"A low-level hallucinogen . . . the idea is to blur the edges so that the CES can do its thing."

"Beautiful," Charity said, her consternation more comic than not. "How do I tell the hallucinations from the results of *psi-Q*?"

"My reaction exactly," Taverner told her, his palms spread. "But I can't deny results. And, as Dr. Lewis is fond of saying—the program works."

Dr. Lewis was looking out the bay window at a pair of finches when Taverner came charging through the door.

"Thought you'd be back," the Task Force Director said mildly. He hid a grin, returned to his earlier contemplation. The birds, however, had taken wing.

"Goddam it, Chief," Taverner exploded, "that woman knows nothing about investigating a murder! I showed her the file on Glynn—and all she did was glance at it. Didn't take any notes, didn't ask any questions—didn't do *anything*!"

Lewis strode to his desk and sat down. "There're a number of things you don't know about Charity, Sam."

"Oh, like what?"

Lewis studied the face of his subordinate. "Like the fact that her memory is near-eidetic. She only needs to look at something once to remember it."

"Oh." Taverner's eyes narrowed. For a moment he seemed deep in thought. "And that's why you gave her the case?"

"We need answers," Lewis remarked with a faint shrug. "And you said yourself that we hadn't found out much. Well, she scored high enough on the Index to make the effort seem worthwhile. And while we've never used *psi-Q* to solve a crime before, it seemed logical to give it a try."

"Did she ask for the job?"

"We told her a little about it. She seemed interested."

Taverner slumped down in a chair.

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In heavy tones, he grunted, "She's not a trained investigator."

"Close enough, though," Lewis said, leaning forward over his desk. "She's been a crypto-analyst for five years. That's similar in a lot of ways. In fact," he paused, adjusted his spectacles minutely, "it might even be *better* than formal investigative training."

Taverner raked his hair with stiff fingers, then shrugged his shoulders and grinned thinly, admitting defeat. He said, "Okay, but you'd better start feeding her something then—otherwise you're going to have a mighty skinny operative."

"That's the other thing," Lewis said. He raised his hand and let it fall back. He hesitated for three or four seconds. "She has leukemia."

"Jesus Christ! Cancer?"

"That's right." Lewis grimaced. "They've used some new tricks; right now she's in remission." He paused. "If she stays healthy for a month or two her chances are maybe sixty-forty."

"Against?"

Lewis's shrug was eloquent. He said, "You're going to be her watchdog, Sam. Just to be sure that she doesn't get into something over her head."

Charity Welles descended the half-dozen steps to the restaurant, pushed open the glass door that threw her reflection back at her—a scarecrow wearing horn-rimmed spectacles—and waited for the *maitre-d'* to seat her. In the middle of the afternoon The American Cafe was not crowded.

Presently, sipping a tall glass of iced tea, Charity settled back to watch the passersby on the street outside. From her vantage point she could see only truncated torsos, headless enigmas that marched past with comical inevitability, like a pressure wave within a liquid.

So far as she could tell, the CES unit she had on was either (a) not working or (b) working so subtly that it was indistinguishable from her first choice. She plucked the vial of tablets from her purse, removed the cap, and shook a tablet into her hand. Without thinking about it, she placed the tablet on her tongue and washed it down with a gulp of iced tea.

Maybe this whole thing is a hallucination, she thought with wry humor. *Like the alien leucocyte army that was . . . is . . . invading my privacy.* With an effort she pushed the thought away. She could get depressed or she could get angry, but neither emotion was likely to alter the circumstances.

Fifteen minutes later a thick-shouldered man pushed through the glass door. Charity had never seen a picture of Tony Amaddio, but she was nonetheless positive it was he.

As the detective approached, she found herself analyzing him. He seemed to move with an unconscious confidence, like a fighter. His face was big-jawed, craggy, his eyes deeply set and surprisingly large. His clothes were conservative, of nondescript blue.

"Charity Welles?"

"Yes."

"You said to look for a 'thin woman.'" There was a flicker of amusement. "Aren't you overdoing it a bit?"

Her answering expression could have been either a smile or a snarl. "Sit

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down. What are you, by the way? Sergeant or Lieutenant?"

"Sergeant."

"Would you like some coffee?"

"Nothing, thanks. You said you had some information on the Glynn killing. What is it?" Amaddio asked the question bluntly, then deposited himself in the chair across from Charity, gazing at her with wary curiosity.

"I said," Charity pointed out with meticulous care, "that perhaps we had information to *share*. You might not think it to look at me, but I'm Sam Taverner's replacement." She dug in her bag, flipped out credentials.

"Who's Sam Taverner?"

"The agent who tried to talk you off the case," Charity said. She smiled and got a grudging smile in return.

After a moment, the big detective said, "I think I *will* have some coffee, after all." He settled back, puzzlement overshadowing his normal caution.

Charity waited until the coffee was ordered and delivered, then pushed aside her own drink and rested her elbows on the table. She said, "Do you want to go first, or shall I?"

"You," Amaddio said economically. He picked up his coffee cup and took a sip.

"Okay. Martin Glynn was a snoop, a half-assed scientist who used other people to feather his own nest and who got himself killed because he ran up against someone who was just *bundles* smarter."

Amaddio choked on his coffee, then abruptly laughed. "Goddam-it-to-hell, woman, you always reduce things to the bottom line like that?"

Charity made a grimace, worrying her lower lip. "Not always, but it does tend to clear the air."

"That it does," Amaddio agreed, smiling weakly. "All right, go on."

For the next twenty minutes Charity related what she knew of Martin Glynn, a frown making a slight vertical crease between her brows. It was not a great deal. He had been at best a journeyman scientist, his few published papers without distinction. Most of his career had been spent heading up an industrial laboratory. Inexplicably, however, after a year's sabbatical spent in Washington, DC, he had come forward with a brilliant paper outlining the preparation of nickel and titanium alloys to convert heat into mechanical energy. As a result, he had been awarded the rather prestigious Kresfield Medal. Given, ironically, on the very evening of his death.

"The Kresfield Medal," the detective remarked, holding up one massive finger, "is large, heavy, and intended to hang on a chain around the recipient's neck."

Charity acknowledged the point with a lift of her eyebrows. "The medal itself might be the murder weapon."

"Then what happened to it?"

Charity chose to regard the question as rhetorical. She said, "As far as forensics could determine, nothing was stolen—except the medal. There were several hundred dollars on the body, along with an expensive wristwatch and a gold ring."

"I was there," Amaddio reminded her.

"There was a piece of paper under his body," Charity went on, looking at

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the big man. "No one seems to know what it means. *S.B., 9 P.M. 3rd fl.*"

"He was meeting someone at nine o'clock on the third floor. S.B., whoever that is. A foreign agent, maybe?"

Charity sat silent for several seconds. Finally she said, "Taverner's investigation showed there are about sixty top-grade scientists working with the alloys he specified in his paper. At the time of his death only one of them was in Washington, DC."

"Hell, yes!" Amaddio said. "He lives here. His name is Albert McCready. The only thing is he was in the hospital that week. He'd suffered a heart attack." The detective paused. "Besides," he murmured then, "McCready is an old man—sixty-five or so." Amaddio's hand formed a fist that rested lightly on the table. "As it happens, he won the same award ten, twelve years ago."

Charity scarcely heard him. She was looking at his fist. It resembled in some ways a gnarled knot of wood, heavy, veined, scarred.

He's probably capable of mayhem, she thought. *His hands are weapons all by themselves. Fuzzy weapons.*

Amaddio said something but the intent of it passed over Charity like quail shot.

"Hey! You okay?"

She started, realized Amaddio was looking at her.

"Fine." Charity blushed, nearly knocking over her iced tea in confusion.

"You sure? You looked glassy-eyed for a moment."

Drugs. Goddam hallucinogens!

"Really. I feel fine." She hitched her chair forward a little and settled the spectacles more firmly on her nose. "Where were we?"

"I asked you if there was anything else—about Glynn."

"Not really. Unless you count the cane. And the hat."

Now why had she said that? What was so strange about the cane? Or the hat?

The big detective waited, saying nothing. He *did*, however, withdraw his hand from the table, used it to stroke his chin.

"The cane was steel," Charity said feebly, after a moment. "Solid—they x-rayed it."

"So?"

Charity shrugged. "I don't know. Why would he want a fake malacca cane? He had a real one in his apartment."

"For protection," Amaddio pointed out simply. "A steel cane would be heavier than a wooden one, more like a club. These streets can be dangerous at night. What about the hat?"

"It was still on his head. Wouldn't it have fallen off—or been knocked off—when he was strangled?"

"It was cold," the big man responded. "*Damn* cold. He had it pulled down tight."

"You're probably right," Charity said. She peered at Amaddio across the table. "Anyway, now it's your turn. What have *you* learned?"

"Not much. Background on Glynn. It boils down to what you said earlier. He was a leech—and somehow he got fat." The big man grinned mirthlessly. "And then somebody took care of the leech. Only thing I don't understand is

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Glynn's behavior during the award presentation."

"No one mentioned his behavior," Charity said.

Amaddio shrugged. "It's just that he seemed antsy as hell. He knocked ten full minutes off his speech, then left right afterwards."

"Have you done background on McCready?"

"Yes. He's supposed to be innovative," Amaddio said musingly. "He developed a whole new product line for one of the west coast manufacters. It made him rich." Amaddio stopped and rubbed the side of his jaw. "What's more interesting is that a man named Mikhail Solovief flew into National Airport the same day Glynn got killed."

"Who is he?"

Amaddio appeared pleased that Charity was not yet aware of this morsel of information. "He's a Swiss citizen and a physicist—with eastern leanings. Lately he's been interested in metal structure." Amaddio looked at the woman. "Principly the structures of nickel and titanium."

"Do you think either of them is capable of murder?"

"Well, Solovief—perhaps." The big man shrugged. "But neither would be my first choice."

"Who would be?"

Amaddio shook his head a little grimly. "You tell me *how* the murder was committed and I'll tell you *who*."

"It always comes down to that, doesn't it? A man strangled in the middle of a parking lot, and no one around." She paused, faltering. "May I call you Tony?"

"Of course." He appeared surprised she had to ask.

She said after a few seconds, "Taverner didn't want you on the case. I do. You've proved you have staying power and I like you. What do you say to our working together?"

Surprise etched itself on the big man's face. "What will your superiors say? I thought you people kept everything to yourselves."

"Normally we do. But this situation isn't normal."

"I have other cases," Amaddio said, measuring his words. "I wouldn't be able to spend full time on it."

"I understand that."

"Then I accept." Amaddio's grin was unfeigned. He leaned forward rather formally, took her thin small hand in his own massive paw and gave it a firm shake. "And I like *you*, too."

The hallucinogen stayed with Charity long after her meeting with Tony Amaddio was over. Her color sense was affected, heightening the edges of things, making the world bright, almost harsh. The CES unit proved to be a bothersome accoutrement, pushing painfully against the bridge of her nose. She removed it, studied the metal buttons, and then shrugging, stowed it in her purse. It didn't look like it was working, anyway. Probably a defective model.

She took the Metro to an Arlington station, got off and walked down a tree-lined street toward her apartment. She was not aware of Sam Taverner's presence in the lengthening shadows behind her, nor knowing, would she have cared.

Charity woke up the following morn-

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ing with a thundering headache. She'd had a series of dreams, disconnected, strobe-like, each frame chiseled painfully out of disintegrating brain-tissue.

So much for low-level hallucinogens. She'd bet that *Taverner* had never taken them. She groaned her way into the bathroom and with grim satisfaction upended the bottle.

She hadn't used the bathroom scale in months; the descent past ninety pounds had proved too traumatic. Likewise, she had removed all the mirrors in her apartment. Chemo-therapy being what it was, it seemed to her that vanity was developing into a rather cheap substitute for self-abuse.

She remained uncomfortably aware of her condition, however. Her hair fell out in clumps while her breasts shrank down to two thimbles. Her pelvic bones became painfully pronounced and, on top of everything else, she'd developed a particularly irritating skin rash.

But that part was just physical. Beyond that was the terror of dying, of never*being*.

Charity didn't think she was handling that aspect of it at all well.

She dressed in a tartan skirt and white blouse, ate a small breakfast and, thankfully, put her mind to work on the problem of finding Martin Glynn's murderer.

In her mind she pictured the note found under Glynn's arm. It was written in a hasty scribble. Contact with moisture had smeared some of the lettering.

S.B., 9 P.M. 3rd fl.

Taverner had supplied samples of Glynn's handwriting; there was no question the dead man had written it.

Who—or maybe what—was S.B.? A contact? A foreign agent, as Amaddio had suggested?

Charity made up her mind. She was going to the parking lot in historic old Georgetown, there to revel among shopkeepers, college students, tourists, street-people, prostitutes, day-laborers, and possibly, just possibly, a man or woman with the initials S.B.

Besides, *doing* something kept her from thinking about her own dwindling store of prospects. Though her doctors *had* been optimistic of late. Charity ground her teeth together. She loathed the debilitative *angst* her condition engendered; it was like a jagged-edge blemish that would not go away.

Well, she reflected, at least she wasn't gibbering. Not yet.

Because of the way the parking lot was hidden from the street, Charity almost missed it when she walked by. Then something clicked and she was comparing present reality with the photographs in Taverner's file.

She opened her purse, took out the CES spectacles and put them on. Then, standing on the spot where Glynn's body had lain she looked around. His automobile had been parked *there* and he'd walked in *that* direction. His footprints in the snow had been evenly spaced and had not seemed particularly hurried.

If he'd kept on walking, she mused, taking mental notes, *he would have ended up on Wisconsin Avenue, heading uptown.*

It was time to see if those square waves churning through her cerebrum were doing anything other than giving her paranoid fits.

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She strolled up Wisconsin, letting her legs carry her where they would, soaking up the warm May sunshine, losing herself in the busy street's rhythm.

She walked as far as Q Street before turning back.

Three hours later, leg weary and starving, Charity sat down at an open-air cafe and ordered lunch. She'd been back and forth over the ground a dozen times, still without a notion of where Glynn was going, or who he was meeting.

Across the street, by the entrance to a flower shop, a girl was arranging sprays of lilies. The stems arched out from a common center, their blossoms a colored profusion.

Charity took two bites of a sandwich and nearly choked.

"You okay, Miss?" The waiter appeared solicitously at her shoulder.

"I'm fine." Charity was looking at the spray of lilies.

Like the stems of the flowers, each foray she'd made had a common center. The walking she'd done might have seemed aimless, but now she knew better. If she overlaid those paths on a map of Georgetown they all formed . . . *vectors!*

She sat goggle-eyed. *Oh, Wow!* Meridian's CES unit had turned her into a human dowsing rod!

At three in the afternoon Dr. James Lewis received a hurried call from Sam Taverner.

"I thought you said Charity Welles was sick!"

"She is . . . you don't get much sicker and live."

"Well god*dam!* She's walking me into the ground." Taverner's voice sounded unhappy. "This morning all over Georgetown, up and down, doubling back—almost ran into me half a dozen times. And now she's going into all the stores up around P and Q Streets, asking questions."

"What kind of questions?" Lewis inquired with some intensity.

"If anybody's heard of *S.B.*" There was a short pause. Lewis heard traffic noises in the background, the loud growl of revving engines.

"Well, maybe she's on to something."

"Maybe." There was a moment of silence, then Taverner said grudgingly, "She *is* damned smooth about it."

"Coming from you that's a real compliment, Sam."

"Yeah? Gotta go," Taverner said abruptly. "She's headed across the street and I don't want to lose her."

"Sam!"

"What?"

"Before she got sick she ran in a couple of distance races. Didn't win but she did finish. Watch her—it isn't good if she exhausts herself."

"Or me," Taverner observed with a snarl. He slammed the phone down and sprinted across the street to the tune of tire-squeals and automobile horns.

The tenth store Charity tried was an Audubon book store.

"Be with you in a minute." The voice came from beneath a section of shelving. Charity looked down, saw the speaker's blue-skirted backside.

"Are you the manager?"

"Yes . . . *ah-hah . . . got it!*" In a moment the manager wriggled upright

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clutching the broken shaft of a screwdriver. She pulled a Phillips shaft from her pocket and fitted the two halves together, then laid the resurrected screwdriver on the counter. A silver name tag said her name was Jo.

She smiled benignly at Charity. "Darn thing's always coming apart. Are you looking for something in particular?"

"Uh, yeah." Charity took an envelope out of her pocket, held it so that the initials *S.B.* were visible. The envelope was bulky, scuffed looking.

"I was supposed to drop this off," she began, grinning ruefully. "I know it's somewhere right around here, but I didn't write down the address." She paused, bit her thumb, shook her head in mock despair. "I went into a couple of places down the street. They suggested I try here." This story, delivered in every one of the other shops, had produced only vague headshakes, and Charity was prepared for the same response now.

But that was not what happened.

"If that's for Steve, I can give it to him," Jo said instead, reaching for the envelope.

"Steve?"

"Steve Brown."

Charity felt built-up tension inside her dissipate. The CES unit wasn't a defective model, after all. "I'm supposed to give it to him myself," she said quickly. "He has to sign a receipt."

Jo was dark-haired and robustly healthy; otherwise she was about Charity's size and age. She gazed at Charity for a moment and then shrugged her shoulders. "He should be here by six o'clock. He lives right over the store."

Charity couldn't stop herself. "On the third floor?"

"That's right."

"I'll be back." Charity said. She nodded her thanks, let herself out, strode down the street wishing that she looked more like *that* woman, and not so much like a Treblinka refugee. She caught a glimpse of herself in the distorted lens of a window, felt a brief tongue of bitterness. For someone in the last stages of *anorexia nervosa,* she didn't really look that bad. Of course if she got any any thinner she'd have only *two* dimensions. . . .

With an effort she shook the feeling off . . . *that* sure as hell wasn't going to help.

At six-thirty, as she ascended the narrow stairs to the apartment above the speciality shop, Charity was thankful for the solid presence of Tony Amaddio behind her. The big detective looked weary after twelve hours of duty, but he'd brightened amazingly when Charity told him she'd found *S.B.*

The street door had been locked. Amaddio bypassed it quickly, expertly, catching Charity's shocked expression and offering a wry smile by way of explanation. Shrugging massive shoulders, he'd said: "Suspects have a way of disappearing out the back—given time."

Charity knocked on the apartment door. When it opened she found herself looking at a skinny man dressed in a fatigue shirt. He was wearing a short beard and his countenance, open, a little puzzled, reminded her of Zonker from the comic strip *Doonesbury.*

"Steve Brown?"

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"Yeah."

Charity gave her name, and Tony Amaddio flipped open a leather case, giving Brown a quick glance at his credentials.

"We'd like a few minutes of your time," the detective rumbled. He moved forward a half step, putting his size twelve shoe an inch from the door.

"Sure." Brown murmured. He seemed genuinely baffled as the two entered his apartment, took the chairs he offered.

"You know a man named Martin Glynn?" Charity asked without preamble.

"No."

"He knew *you*," Amaddio said harshly, fixing the other with his gaze. "Tall fellow, big blade of a nose—you sure you don't know him?"

"I'm sure," Brown responded without heat. "Anyway, what do you mean —*knew* me?"

"He's dead."

"Really." Brown looked somewhat piqued. "So's Custer."

"Glynn died right here in Georgetown," Charity put in quickly, giving both men a glance. "He was killed. He had written a note with your . . . name on it."

There was five seconds of silence, broken finally by Amaddio. "He wasn't just killed, Brown—he was murdered! Sometime between ten and eleven P.M." He paused, stared at Brown with seeming animosity. "Where were you that night?"

"What night was that?"

"Twenty-third of January," Amaddio ground out.

The slender man thought about it, then got up and consulted a calendar. There was anger rising in him, showing in the two spots of color high on his cheekbones. He contained it, seated himself again, said stiffly: "I was right here."

"Can you prove it?"

"Sure. There were three members of the Vicious Circle with me. We played cards."

Charity put her hand on the detective's arm, forestalling further comment. She said, "The Vicious Circle? What is that?"

"A writer's group that meets every week. That Wednesday it was held here. And generally more show up—but the weather was bad that night."

"What time?" Amaddio, terse.

The slender man gave a small shrug. "Eight thirty, nine o'clock."

The detective did not look satisfied. "How long do your meetings last?"

"Twelve, sometimes twelve-thirty."

There were other questions. Brown answered them in clipped sentences, not volunteering any information.

"Who are the other members of this Circle?" Amaddio asked finally, digging out his notepad.

Brown gave three names, appended addresses and telephone numbers, and then waited, lips a thin line, fingers interlaced.

"We'll check these out," the big detective promised matter-of-factly. He stowed the notepad away and surged to his feet.

"Ter-*rific*." Brown said. He sprawled in his chair as Charity and Amaddio let themselves out.

Driving over Key Bridge, Amaddio

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gave Charity a quick glance. "What do you think?"

"I think you have a rotten attitude toward people." Charity told him, miffed. "Why're you so hostile?"

"Um." The big man was thoughtful for a moment, his hands tightening on the steering wheel. His grin, when it came, was conciliatory. "Too many years on the street, I guess." He stopped. "I meant—what did you think about Brown?"

"He's innocent."

The detective gave her an odd look, then shrugged and concentrated on driving. He slewed his automobile around a van and a moment later hit the down ramp onto Route 66. They were heading for an address out in Falls Church, the first of the names Brown had given them.

Charity could not have explained her reasoning. Maybe it was the CES unit and those damned square waves *heuristically deducing* from voice stress and body cues and god-knows-what. Or maybe it wasn't, maybe it was only a hunch. Whatever it was, Charity was convinced Steve Brown had been telling the truth.

Then why, she wondered, *had Glynn written that note?*

The man in Falls Church backed up Brown's story. He was a big man, with close-cropped salt and pepper hair. Charity studied him closely, trying to read beyond his expression of helpful reticence.

"Never heard of Martin Glynn, I suppose?" Tony Amaddio asked after several minutes of unproductive questioning.

There was a headshake. "I don't have the foggiest idea who you're talking about."

"I was afraid of that," the detective muttered irritably.

Climbing into the car a few minutes later, Charity got the same feeling she had had with Brown. The man *didn't* know Martin Glynn.

"The other two are in Maryland," Amaddio said, turning in his seat to look at her. "It's still early—we might as well check them out." He steered the automobile back onto Route 66 and from there cut over to the Capital Beltway.

George Andrews, the second man on the list, further corroborated Brown's account of the evening's events. And he, like the others, had never heard of Martin Glynn.

"We're getting nowhere," Amaddio stated flatly, slamming the car door in disgust.

"There's only one more to see," Charity moderated. "In Bethesda."

"I'm willing to bet he won't be any different," the big man grunted. With a grimace he started the car. "What's his name, anyway?"

"Charles Sheffield," Charity said.

"Martin Glynn? Never heard of him." The words were spoken in a soft English accent. Sheffield would likely have come from Yorkshire, Charity guessed. Her eidetic memory was more visual than aural, but it was being boosted by Meridian's CES unit. And anyway, she was giving herself a lot of leeway —Yorkshire just happened to be the largest county in England.

Sheffield was slender, bearded, seemingly fit. He was wearing dark

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slacks and a pull-over sweater. Seated in a chair in his study, he reminded Charity of a professor she'd had once in college. And, like that professor, Sheffield had a doctorate in theoretical physics.

"And I suppose you were playing cards until close to twelve-thirty." Amaddio said. It was a statement, not a question.

"Yes, that's right."

Amaddio stared at the Englishman, frowning. "And nobody left early?"

"No. It would have broken up a foursome."

Charity had been sitting patiently, following the conversation. It was predictably following the pattern set by the other members of the Circle.

"Martin Glynn was awarded the Kresfield Medal the night he died," she said when a moment of silence offered itself. "Ever hear of that?"

Sheffield hesitated, absently scratching the back of one hand. "It does seem to ring a bell, but I'm afraid I can't place it."

Tony Amaddio put his massive hands on the arms of his chair and stood up. He shrugged, then moved slowly, resignedly toward the door.

"Just a minute," Charity said. She put out a restraining hand, caught the big man's sleeve. "The Kresfield Medal," she said to Sheffield, "is for a contribution in the field of metal alloy research."

"Ah." The Englishman's blue eyes grew a little brighter. "I know a little something about that."

"Nickel titanium alloys?"

Sheffield smiled faintly, shook his head. "A trifle, only what I pick up now and then from Bert."

There was one second of thunderous silence and then Charity pounced. "Bert *who?*"

"Bert McCready. He's been at the meetings once in a while—he writes poetry—and not all that well." Sheffield shifted in his chair, looked from one interrogator to the other as though sensing a change in attitude. "Does that mean anything?"

Amaddio sat down heavily, the weariness gone from his face. "Damn straight it does! It ties McCready to Glynn."

"Was McCready supposed to be at that meeting?" Charity asked.

The Englishman nodded. "Yes, I think he was." He paused for several seconds and then continued deadpan. "Of course he *couldn't* be there—he'd had open heart surgery the day before."

Amaddio's neck muscles corded, then slowly, painfully, relaxed.

"What did McCready tell you about his work?" Charity asked.

"He was tinkering with the idea of putting some of his 'flex-metal' into production as an engine. Although as I understand it, his mix wasn't quite perfected yet. But he told me it *did* contain more copper and zinc than other researchers were using."

"An engine?" Amaddio was looking at him as though he were crazy.

"It's an elegant theory," Sheffield said, shifting in his chair. "Structured castings of his alloy would be subjected to a repeated heating/cooling cycle. That would force them to distort back and forth—actually change shape—and in the process drive a flywheel. He showed me a wire made in one of his early ex-

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periments. Lay it on a hotplate and it would bend at right angles. It 'remembered' Bert's doing that to it. But pick it up again, let it cool, and it straightened itself back out." The Englishman paused. "Bert assured me an engine made of his flex-metal could be quite efficient."

" 'Converting waste heat into mechanical energy,' " Charity quoted.

"Yes."

"That's what Martin Glynn won the award for." Her meridian sense was suddenly sending shivers up and down her spine.

It was past ten o'clock when Charity stepped off the Metro. It had been a grueling day. Both she and Amaddio decided that any more effort would turn them both into zombies, unfit to continue. Besides that, the big detective was scheduled for yet another half-day stint. Although he'd offered to drive her home, Charity had insisted he drop her at the nearest subway station.

Walking toward her apartment, Charity toyed with the idea of calling the Task Force chief. Using the CES unit, she'd broken through the seeming barriers surrounding the case. It was clear that Glynn had *synthesized* McCready's "flex metal." What wasn't clear was McCready's part—if any—in Glynn's murder.

Passing a recessed entranceway, Charity sensed movement. She turned her head, saw a tall, strongly muscled man. Behind him was another, this one middle-aged, with a full moustache and glasses. The streetlight cast their figures in stark relief.

"Miss Welles?" It was the middle-aged man who spoke. His voice was husky, well-modulated, heavily accented.

Charity stopped, hesitated, then started to move again. She hadn't liked the look in the tall man's eyes.

"Get her, Saj!"

The tall man moved much faster than she, cutting off her avenue of escape. She veered right, across a newly planted lawn. A huge hand clamped itself on one shoulder, spun her around.

"Don't hurt her!"

Charity bent her head, bit down savagely on the big man's hand. There was an exclamation of pain and the hand was wrenched free. "Damn you!" Saj snaked an arm around her and lifted her off the ground. "Try something now, why don't you?"

He was squeezing the breath out of her. The light began to grow dim, becoming suffused with a dull red corona.

Faintly, Charity heard several reports, like an automobile backfiring. The pressure on her chest lessened, then ceased entirely.

"You okay?"

Gasping for air, Charity looked up. Sam Taverner was gazing down at her solicitously. Beyond him lay two motionless heaps.

"You killed them?" She stared around her with horror.

"One's dead, one's not," Taverner said. "The guy with the muscles isn't going to cause anymore trouble."

Charity sat up, chest still aching. "Who are they? What did they want?"

Taverner moved away, briefly patted the pockets of the two men. When he came back, he said: "The big one

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doesn't have any papers. The other one's name is Mikhail Solovief."

Charity blinked, her mind on overdrive. "He's a Swiss national. He was in Washington the night Glynn died."

Taverner raised his eyebrows, but didn't say anything. He helped Charity to her feet. "You go on home," he said. "I'll take care of things here."

"But—"

He gave her a lopsided grin. "Go on, beat it."

She took a few steps, stopped, looked back bewilderedly. "Where did *you* come from?"

"Me?" Taverner grinned again, his teeth white against the darkness. "Hell, didn't you know? I'm your guardian angel."

Charity roused herself in the morning, ate a hurried breakfast, and then sorted through her wardrobe until she found a summer suit that was moderately acceptable.

Exiting the apartment, her thoughts were not on Martin Glynn, nor even on the improbable events of the evening before. They were on the dice roll cast periodically for her at the sprawling beehive called Walter Reed Army Hospital.

After two hours in a paper hospital gown, suffering icy drafts, the sting of needles, and the stares of sympathetic hospital personnel, Charity was rewarded with a positive report—her leukemia was still in remission.

"Stay on the diet we've outlined for you," her doctor said with an air of detachment, "and avoid stress. And keep taking your medication." He gave her his second-best bedside-manner smile. "We're very hopeful of your chances."

She had won a reprieve only—the dormancy of her illness was as unsettling as living on top of an earthquake fault. She grimaced as she shed the paper cocoon and hastily donned her own clothes.

And sure, she thought glumly, striding out the hospital entrance, *do what the man says—avoid stress!*

The afternoon sun, slanting through the large squares of window glass in the Convention Center, splashed in Charity's eyes, momentarily blinding her. Moving a step or two toward the center of the stage, she escaped the too-bright light.

It was here, on this dais, that Martin Glynn had accepted his award.

Why had he become so agitated? Why had he left with his speech unfinished. . . ? Charity found a folding chair, seated herself, contemplated the empty auditorium with a frustrated shake of her head. The CES unit didn't seem to be helping; perhaps she had been overly precipitate in throwing away Taverner's hallucinogens.

After a few moments of thought she found a pay telephone in the lobby and called Task Force Headquarters.

"Where are Martin Glynn's personal effects?" she asked presently of a clerk in the records department.

"Hold on," the voice said in her ear. There were the sounds of a file cabinet being opened, then the voice again: "They were held for the required ninety days, then given to his next-of-kin—his mother."

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Charity grimaced. "After being analyzed."

"After being *thoroughly* analyzed." There was a whistle. "I've got twenty-two pages of printout."

Charity worried her lower lip. "Would you call his mother, ask her if I can see them?"

"Okay."

Charity gave her number, hung up, stared dispiritedly at the sunlight that lay pooling on the floor. Much about Martin Glynn remained a mystery: there simply didn't seem to be a plausible explanation of how his murder could have happened. But, plausible or not, he *had* been murdered.

The telephone rang.

"Sorry," the clerk told her. "his mother donated everything—except his jewelry—to non-profit organizations. She saw no reason to keep it—"

Biting her lip, Charity put the receiver back in its cradle.

It was time to have a talk with Bert McCready.

"Does he know we're coming?" Tony Amaddio rubbed sleep-weary eyes before glancing at Charity in the seat beside him. They were approaching Bert McCready's house, its imposing architecture softened by deepening twilight.

"I talked to his nurse," Charity said. "She will only allow us half an hour."

"He's that sick?" Amaddio tried to prevent a yawn and was unsuccessful. He looked embarrassedly at his companion, then slowed the automobile as it came to the driveway. His headlights shone on a large imported sedan.

"Trappings of success," Charity murmured, giving Amaddio a peculiar smile. "Let's see what its owner is like."

McCready was *not* what Charity imagined him to be. He was an elongated hollow-cheeked wreck of a man, his mop of lank gray hair disheveled and dirty.

He sat up in bed as they approached, glanced first at the big detective and then switched his gaze to Charity. His eyes lingered on her face for several moments before his lips twisted into the first motions of a smile. "They say you know a lot about flex-metal," Charity began, after introductions had been made. She sat down on a chair, studying McCready carefully, wondering if the man was really as ill as he appeared. There was, she noted, a wheelchair by the side of the bed.

"I have been researching it for the past ten years," McCready said. "I ought to know something." His voice rasped in the room's confines.

"Did you know a man named Martin Glynn?"

McCready gave her a sharp look. "Of course—he won the Kresfield Medal this year."

Amaddio shuffled his feet, moved closer to the bed. Harshly, he said, "Glynn was murdered. You probably heard that, too."

"Yes." McCready pushed himself higher on the bed. He was silent for a moment, clearly uncomfortable. After an interval of time he asked, "Why are you two here?"

"To get the name of the man you hired to kill Glynn," Amaddio grumbled. He leaned over McCready, his

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face only inches from that of the scientist.

"I hired no one! Why would I want to kill Glynn?"

"We're really here because Glynn stole your formula from you," Charity interjected at that moment. Her meridian sense was trying to tell her something, but whatever it was wasn't getting through.

McCready shifted his attention, stared at Charity with a baleful expression. He shook his head. "Glynn didn't steal it—hell, he broke new ground. He was *ahead* of me by maybe six months or so."

"You didn't resent that?"

"It happens." McCready wore a pained look.

"Yes," Charity agreed bemusedly, "it happens. But not to a Martin Glynn, not to a third-rate hack."

"Are you telling me he *did* steal my work?" McCready's voice dropped in pitch and volume, took on an almost mechanical crispness.

"Could be." Amaddio moved a little, drawing the researcher's attention. "Maybe you just told the wrong person about it."

"What do you mean? I told nobody!"

"You told Sheffield." Amaddio smiled at the other man, stepped away from the bed, leaned with a studied casualness against the wall. "Sheffield told *us*."

"Nonesense! That was early stuff!" McCready's face took on a look of disgust. "It wasn't important. And anyway, we talked theory, not specifics. Material science is not his field." McCready abruptly seemed to run down. He shifted his position minutely, slumping a little, staring wearily at his hands.

Charity allowed the ensuing silence to run its course, and when the researcher focused again on her, she said, "You were awarded the Kresfield Medal, too, weren't you?"

"Yes."

"Could I see it?"

Laboriously, McCready slid off the bed and into the wheelchair. He looked first at the big detective, then at Charity. "I'll show *you*," he said with a hint of anger, "your pet ape can stay here."

Amaddio's face underwent a metamorphosis. He actually grinned a little, then suppressed a yawn. In mock horror he said to Charity, "You can't leave me alone with this bed. That'd be *too too* cruel."

"You'll be okay," Charity said, rising. "Be back in a flash." She followed McCready to a door on the far side of the bedroom. A narrow dimly lit corridor led off it.

"My workshop," McCready said presently. He motioned Charity through into a wide room filled with the paraphernalia common to laboratories. "The medal is over there." He pointed to a glassed-in wall-case.

The Kresfield Medal bore the rough likeness of a Tau cross. McCready's name formed a crescent on it in *bas relief*. The chain from which it hung suspended bore the lustrous shine of pewter.

"Beautiful, isn't it?" McCready's approach had been soundless. He stopped beside Charity, favoring her with a sidelong look.

"Yes." Charity tried to imagine those links tightening around Martin

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Glynn's throat, stopping the flow of blood, crushing arteries and tendons. She abruptly shivered.

"*Put the wire on a hot plate,*" Charity remembered Sheffield saying, "*and it would bend at right angles . . . pick it up again, let it cool, and it straightened itself back out.*"

The CES unit was practically screaming inside her head.

"You *did* kill Glynn, didn't you?" Charity asked suddenly. She stared at the researcher with wide eyes.

McCready looked cold, as though something deep within him had died. He merely rubbed his jaw, however, and said nothing.

"We already know Glynn stole the formula for your alloy," Charity told him. "And that he improved on it—and then published."

"How—?" began McCready. He stopped abruptly, his face flushing, taking on a pinched, bitter look.

"How did he steal it? You couldn't know it, but that part was easy." Charity turned away from the wall-case, quickly scanned the rest of the laboratory. There were electric kilns along one wall, ingots of some silvery metal stacked beside them.

"I *couldn't* have killed Glynn," McCready rasped from his wheelchair. "I was in the hospital."

"That part of it was brilliant," Charity conceded with a glance in his direction. "You took what he had done—and *improved* on it. You created an alloy that would not only flex on demand, but would *double* flex." She paused a moment to marshall her thoughts, before continuing. "Glynn stopped snooping a little too soon, didn't he? If he had continued, he'd have found the secret for that, too."

McCready's face had gone chalky white. He moved the wheelchair stiffly toward the middle of the lab. "Go on," he said in a flat monotone.

"You made a copy of the Medal out of double-flex alloy," Charity said. "The first 'memory' must have been when the links garrotted him. But the second memory was the kicker. It was truly a work of art. It turned the medal into something else entirely."

"What?"

She shook her head. "I don't know yet. My *guess* is a malacca cane." Charity imagined Martin Glynn as the Medal was put around his neck. His CES unit must have started responding like a geiger counter inside Oak Ridge. No *wonder* he'd seemed agitated. So—as soon as he was able, he had headed toward Georgetown—where McCready was supposed to be.

Charity looked at the scientist. "What was the trigger, anyway? Some kind of timing device?"

For a moment McCready did not speak, only ran his fingers through his hair and massaged the back of his neck. Finally, with a smile so faint it was almost lost, he said: "Simple cold—a thirty-degree drop in temperature."

"*take it off the hotplate . . . let it cool. . . .*"

Charity had taken two steps toward the door when McCready cut her off. From somewhere he had picked up a pair of metal-working tongs. Staring at her, face working, he said, "In this laboratory there are a dozen different ways of killing you."

"Maybe," Charity retorted with no

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hesitation. "But don't forget the Hulk out there. And if you somehow got by *him*, I have a shadow outside, name of Sam Taverner." Ignoring the tongs, she stepped around McCready and went through the door.

Dr. James Lewis had closed the drapes, making his office seem smaller, its light more subdued.

"Solovief threw me off," Charity told him. She was seated opposite his desk in a leather wing-back chair. Three feet to her left Sam Taverner looked on interestedly, his thin face almost in repose.

"Threw you off? How?"

"He was in town the night Glynn was murdered. It wasn't until he tried to kidnap me that I knew he wasn't the killer. He was after Glynn, sure—but what he was really interested in was the CES effect. He wouldn't have killed Glynn, he'd have taken him out of the country."

Lewis leaned forward, trestling his chin in one spindly hand. He stared at Charity over the tops of his glasses. "I hope you'll stay with us," he said in a dry even voice. "We need good operatives."

"Maybe I will," Charity said. She gave a brief shrug. "Right now I just want to concentrate on *living*."

"The odds go up each day you stay healthy." Lewis responded equably. "Your doctors are very optimistic."

"But *they* don't have leukemia," Charity told him wryly. Somehow, saying the word out loud like that, it didn't seem quite so frightening.

Beside her Taverner stirred, smiled, murmured softly: " *'Do not go gentle into that good night. . . .'* "

"You bet not!" Charity breathed. She looked alternately at the two men. Then, softly as had Taverner, she finished the quote, " *'. . . rage, rage, against the dying of the light!'* " ■

JACK GAUGHAN, 1930-1985

Jack Gaughan's art is very familiar to readers of this magazine or virtually any other in this field. His work was in much demand among both magazine and book publishers, perhaps because of his attention to detail, his deep understanding of the special requirements of science fiction, and his flexibility in fitting style to story. He was perhaps the only illustrator to have won Hugo awards as both Best Fan Artist and Best Professional Artist in the same year, and one of the few artists ever invited as Professional Guest of Honor to a World Science Fiction Convention.

Jack died in Albany Veteran's Hospital, near his home in upstate New York, on July 22, 1985, after a lengthy battle with cancer and other health problems. He will be remembered not only as one of science fiction's best illustrators, but as a gentle and articulate man whose intelligence, conscientiousness, and sense of fun made him always a pleasure to work with.

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Stephen L. Burns

THE MAN OF PEACE

Certain kinds of teachers
are fond of saying,
"Don't tell me, *show* me."
But the more
profound the lesson,
the more painful
the demonstration. . . .

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The glass booth was surrounded by armed guards of several nationalities. The face of the man inside the booth had become engraved in the minds of an overwhelming majority of the peoples of the world. That pale, sad-looking, middle-aged man's face could have belonged to a pharmacist or a teacher, a shoe salesman or a minister. There was nothing special or sinister looking about it. The man under the glaring lights in the bullet proof glass booth could have been anybody.

But he was not. He was Albert Francis Martin, who referred to himself as a man of peace.

The glass booth was set up in the most extraordinary court ever convened. That court had been built up around the armature of the International Court Of Justice for the sole purpose of trying Albert Martin.

Most such international bodies are created slowly and painfully out of a chaos of quibbling and alliance-backed maneuvering for power and position. The result is nearly always a politically hamstrung, nearly impotent agency all but incapable of fulfilling the task for which it had been created.

Not so this court. Unprecedented international cooperation had seen its formation in record time, unslowed by bickering over the shape of tables or seating arrangements or other trivialities. All other considerations were set aside in pursuit of a single clear objective: Albert Francis Martin was to be tried before the eyes of the world and made to pay for his crimes.

Link by link the whole chain of events was brought out and examined. Subsidiary questions such as the guilt or innocence, and the culpability of the other involved persons and nations was to be left for later examination. Martin himself had confessed freely, even to the point of providing lists of accomplices, suppliers, and timetables. His guilt was clear. But the forms would be observed with light and fanfare, and Martin's name made an anathema on a global scale.

Only after the case was made against him was Martin allowed to speak for himself. Many were against allowing him to speak at all, but they yielded to the majority.

After all, it was reasoned, what could he possibly say which could make a difference?

The witnesses were questioned from a prearranged agenda, the questions posed on a rotational basis by a group of ten prosecuters representing the Socialist, Democratic, and Third World nations. Three judges from the International Court of Justice presided. The proceedings were televised live, worldwide, and all interchanges were simultaneously translated.

The trial lasted well over a month and produced several volumes of evidence and testimony. What follows are three representative samples of the testimony given during the trial's second part, a single highlight of the third, and the entire text of Albert Francis Martin's statement.

QUESTIONER: Dr Konstantin Gorbaychev. REPRESENTING: USSR

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WITNESS: Superintendent Nigel Hurcomb, RCMP. *Canadian National*
Q: So you were surprised by what your raid on Martin's enclave on Lake Deception uncovered?
A: Surprised and frightened, sir.
Q: How could such activity escape the attention of the Law?
A: Well, as we saw on the map, Lake Deception is about 560 kilometers north of Saskatoon, Saskatchewan, and in a very sparsely populated and somewhat inaccessable area. We were aware that Martin had a project in that area, but had no reason to suspect that he was constructing anything other than an exclusive hunting and fishing complex, as he had quite publicly stated.
Q: The Lake Deception Camp—rather aptly, yet ironically named, yes? Do you feel that you were—ah—remiss in that you were unaware of the true nature of Martin's project?
A: No, sir. But I wish to bloody hell I had known! I would have gone in there with an armed squad and stopped him one way or the other and worried about the legal niceties later! But God, who could have imagined he was up to such a thing?
Q: Who indeed?

QUESTIONER: Randall Partlow. REPRESENTING: United States of America
WITNESS: Alan Blass. *British National*
Q: You flew the crated devices to Turkey, correct?
A: Yessir.
Q: Had you any idea what you were carrying?
A: Bloody Chri—uh—No, sir.
Q: Why not? Didn't you ask?
A: I'm a smuggler, see. I've found that it's safer if I don't know what I'm carrying. Less worry, and less temptation—if you take my meaning.
Q: I believe I do, Mr Blass. Did you know that Mr. Martin was the source of your cargo?
A: I sort of found out, if you see what I'm saying.
Q: What did you think when you found out you were working for Mr. Martin, however indirectly?
A: I thought I'd best keep me nose clean and do a right job. After all, he might've had more work—even honest work—for me later on. I'd heard of him, see, and knew he was some rich industrialist type. That made me feel kind of safe, like.
Q: You weren't very safe though, were you?
A: Jesus, you got that straight!
Q: Would you have refused to fly the cargo in question had you known its true nature?
A: Too bloody right I would've! I mean, Jesus!
Q: But you did fly the cargo, Mr. Blass, and did you not deliver it, as specified, to a Mr. Abdullah Otmazal at a landing field near Besni, Turkey?
A: Yessir I did. But you got to believe me, I thought it was likely drug manufacturing equipment or rocket launchers or something harmless like that!

QUESTIONER: Carlos Montoya. REPRESENTING: Nicaragua
WITNESS: Abdullah Otmazal. *Turkish National*
Q: So you handled the cargo according to the accused's order?
A: Yes.

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Q: Were you given any special instructions?
A: Yes.
Q: What were they?
A: I was to see that the proper crate reached the proper plane. I was to make certain that the planes took off at specified times, and to see to it that the two pilots remained unaware of each other.
Q: Were you told the reasons for this?
A: No.
Q: Weren't you curious? Didn't you wonder at there being two pilots, one Iraqui, one Iranian, each flying a plane marked to allow it to pass through the others' airspace, and each carefully kept unaware of the other? That plus the other instructions—didn't you wonder what was going on?
A: I was paid to be incurious. And it would not be the first time an arms shipment was split between both sides.
Q: But it was not quite the usual arms shipment, was it?
A: No.
Q: Tell me, Mr. Otmazal, do you feel guilt for your part in this?
A: (Witness pauses, shrugs) Should the knife merchant feel guilt if his wares are used to slit another man's throat?
Q: That is hardly an answer.
A: That is my answer.

During the first part of the trial Albert Martin had sat quietly inside the glass booth, looking tired and withdrawn, but for the most part maintaining an impassive facade. It was not until the end of that first part that it became obvious that his impassivity was only a facade.

During the second part, from which the forgoing testimony was taken, it became clear that the proceedings were taking a toll. Martin's condition began to deteriorate noticably. He appeared drawn and preoccupied, began to lose weight, and it was reported that he was having trouble sleeping.

The world wished him nightmares.

It had been decided beforehand that no testimony would be taken from the two countries directly involved. Both provisional governments had issued statements, which were read into the Court Record. The assertions made in those statements were nearly identical, and were corroborated by other testimony and by Martin's written confession. So the Court ruled it stipulated that Martin had approached those countries and had struck nearly identical deals with them.

The evidence that they had dealt with Martin was obvious and beyond argument or denial.

By the beginning of the third part of the trial it was also obvious that the accused's health was failing rapidly, his decline noticable on a day-to-day basis. A physician was appointed by the court to oversee the care Martin was getting from several lesser personnel.

The third part of the trial received the greatest attention yet, and that attention did not slacken as the trial rolled ponderously on. The testimony was too compelling, including many moving stories of courage and terror, of pain, loss and self-sacrifice. The following is part of what is still considered one of the most controversial testimonies given.

QUESTIONER: Sesui Tomasatu REPRESENTING: Japan

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WITNESS: Belinda Cameron International Red Cross. *Canadian National.*
Q: We are aware of the press of your work, Ms. Cameron, and again the Court wishes to thank you for coming to testify.
A: You're quite welcome.
Q: It is now eighteen weeks after the disaster. How would you assess the situation?
A: The situation is—(Witness pauses, takes drink of water)
Q: Are you all right, Ms. Cameron?
A: Yes, please pardon me. It is hard to know where to begin. According to our estimates, the dead number over ten million. We estimate that yet another half-million will die before the year is out, due to burns, radiation poisoning, disease, and lack of proper medical attention. That is an optimistic estimate. The number of dead will continue to rise due to fall-out related fatalities in outlying areas, starvation, competition for uncontaminated resources and diseases due to unburied or improperly buried bodies.
Q: You paint a frightening picture.
A: I've hardly begun. Parts of Baghdad and Teheran still burn, and many slip past our cordons and return to the contaminated areas. Medical resources still fall far short of what is needed. Disease and starvation are still beyond our control. As for the survivors—(Witness' voice breaks) Have you ever seen a child with 60% of the skin burned from her body, nothing left of her hands but charred septic flesh and bare bones? We are trying to treat over sixty thousand children, many in worse condition than that! And those are just the ones who lived long enough for us to find them, whether we can help them or not. (Witness turns to look at the accused, who hides his face) Disaster hardly describes what we are dealing with. Nor does tragedy. One seared and flayed child is a horror, but a hundred thousand? You—you've seen the horror on television, but have you really seen it? Smelled it? Has your gut twisted and heaved at the screaming?
Q: Ms. Cameron, if you—
A: No! No, dammit! The man you're trying stands accused of bringing about the deaths of ten million people! This man has done an evil that— that— (Witness pauses, takes a deep breath) But then I remember—and well you should remember, and think long and hard on this: Those dead and tormented millions are but the merest fraction of the numbers contemplated by the pious, respectable, and oh-so-honorable politicians of all the countries with nuclear arsenals. This is but one house on one block out of an entire city destroyed compared to what has been calmly contemplated and for which you have prepared. The two blasts totalled the power of eight to ten Hiroshima bombs, the experts say! Do you remember Hiroshima, Mr. Okatu? Nagasaki?
Q: I am sorry I—
A: These were little bombs! Tactical weapons! I hope to Christ that people are thinking about this! Thinking! Albert Martin set off two firecrackers and a dozen of you own entire warehouses of dynamite! (Witness pauses, speaks in a low shaking whisper) I work inside the refugee camps, right in the midst of the suffering. Sometimes I lie awake at night, listening to the cries and smelling the stench of pain and loss and death,

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and maybe I become a little crazy, because you know what I wonder? Would you really like to know? Sometimes I wonder if Albert Martin might really be a saint! Yes, a saint! Maybe we'd forgotten the reek of blood and burning and what he has done is given us the example we need to make us truly understand the nature of our folly.

The indictment against Albert Francis Martin grew daily; the numbers killed, maimed, poisoned, and doomed. The grisly accounts continued: the mass graves, the foredoomed unborn, the orphaned and the displaced. It was obvious that he was responsible for a disaster of such a scale that the world's coping mechanisms were nearly helpless in combatting it.

During the third part of the trial there was real concern about whether Martin was going to live long enough to testify, and more importantly, to be sentenced. A round-the-clock suicide watch had long-since been posted, and the word most often used to describe Martin's appearance was *haunted*. Looking at him it was easy to believe that he was beset nightly by the ghosts of ten million dead, all demanding an accounting.

Belinda Cameron's testimony added fuel to the controversy which was raging worldwide. Cries for disarmament continued to increase in number as more and more people found it nearly impossible to ignore the all-too-real possibility of their own extinction while faced with the constant barrage of reports and images coming from the Court and the area of destruction.

The evidence was hard to ignore. The only comparable events were the destruction of Hiroshima and Nagasaki, which to most were only the unheard remembrances of a very few, some grainy black and white photographs and a handful of quaintly jerky black and white films.

But this time pictures and sound had come from the area within hours, live, and still fed the papers, magazines, radio and television. Everyone watched and listened, and those who wished to tune it out were hard-pressed to do so for too much was happening.

Movements arose and consolidated, splintered and merged. Politicians, popular figures, and pundits mounted electronic soap boxes and made their pronouncements. Sermons were delivered. Cults formed. Polls could not keep apace with the rapid upheaval in public opinion. The trial ground on toward its final days.

At last the case against Albert Francis Martin was made. The evidence was indisputable and damning. It had been proved that he had financed and masterminded the construction of two atomic bombs modeled on the archaic Fat Boy design, each four to five times more powerful than the ones which had leveled Hiroshima and Nagasaki over forty-five years before. He had sold those bombs to the warring nations of Iran and Iraq, and through elaborate planning and timing, arranged it so that both were detonated simultaneously over the capitols of those nations. As a final ironic touch, the two time-dependant triggering devices set off not the bombs which had been purchased, but the unsuspected weapon directly overhead.

In a world history where incidents of

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mass murder and genocide are hardly rarities—if they are not commonplace —Albert Francis Martin had seen to it that his name would be recorded in large fiery letters.

And at the end, after he had been completely bound in chains of evidence proving his guilt and culpability, Albert Martin was allowed to speak. To defend himself if he could.

The man in the glass booth took a drink of water, and the image of that ordinary act was carried via satellite to nearly every television in the world.

No one knew what to expect. Would he rant and rave like the madman he must surely be? Or would he weep and grovel, begging for a mercy his acts had not shown? No one knew, but almost everyone had an opinion.

Albert Martin appeared to have aged several years during the month-plus long trial, and was only a shadowy husk of the man who had been put on display under the lights and in the glass booth on the first day of the trial.

He put down his glass, ran a shaking hand through his thinning hair and began to speak. An estimated 5.1 billion people listened.

My name is Albert Francis Martin, and I think of myself as a man of peace. (This statement provoked a severe reaction inside the Court and it took the Judges over a minute to restore order.)

I am not surprised that you are outraged. I have done a terrible terrible thing. I have caused the deaths of millions of innocent people and caused the horrible suffering of millions more.

This Court will quite probably decide that I am to be put to death for my crimes. That would only be fair and just. Such a decision would also be an act of mercy, for only the end of my life can release me from the guilty weight of my conscience. Perhaps I do not deserve such mercy and it will be witheld. That too would be fair and just. But I will die anyway, for my guilt consumes me and if this Court does not kill me, it surely will.

I have not resisted the temptation of suicide just so that I could stand before you and beg your pity. Not only am I a man of peace, I am also a realist. Pity—even if it is given—will not save me. Nor would exoneration.

You see, I am a religious man, and I believe in Damnation. I know that I am surely damned for what I have done. No matter the judgement of this Court, the Judgement of my God against me is already made, and there is no sentence or indictment which could be brought against me to surpass that.

I am a wealthy man. I could not have done what I did had I been poor. I had to strain my resources and connections to the breaking point to carry out my plan. Many times it seemed my plan was to fail, and many times I was sorely tempted to abandon it.

But I persevered, and in the end I succeeded.

The countries which I helped destroy were not chosen out of any personal hatred for their peoples, or any belief that they above all others should suffer such a fate. I had the choice of several pairs of warring nations; of those there is no shortage. They chose themselves in that both were eager to gain the weapon I offered and both were eager

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to see their neighbor destroyed. But in these sad days of the world, let me tell you that it could have been any of you! Almost every one of you is at war with another, and would destroy him totally if you had the means and thought you could escape punishment by his allies.

(Martin pauses, takes sip of water)

This world trembles at the brink of the abyss. But that is cliche. More and more nations gain nuclear weaponry, and those nations already possessing such weaponry build up their arsenals with a single-minded zeal unmatched in any of their other activities. But that is old news, unnerving only a very few. Each proclaims its unwillingness to use such weaponry, while making more and more elaborate plans for the final war. But only a deviation from this pattern is worthy of note.

Three times we have seen world-wide alerts, and each time we have managed to keep from passing the point of no return. By the grace of God we still exist. But can we survive one more such close brush with Armageddon?

The big countries need not start it. There are nations ruled by nationalistic zealots and demagogues, and sooner or later one of them is going to procure nuclear weapons and he is going to use them, regardless of consequence. If they are directed against the wrong nation, or are used at the wrong time, those actions will be the beginning of Apocalypse.

One of the major nations or one of the minor; it is only a matter of time. I saw that, and saw that there was little time left if the world was going to get a chance to stop and think.

But we have grown used to living with that threat, grown used to shrugging our shoulders and putting it out of our minds. Most people cannot really imagine what it would be like if the bombs begin to fall. Only a few want to think about it, and too many of them are certain that their own ends would be served, and that such a conflict can be won by their side.

I arranged it so that two countries could have their war without setting the globe afire. No one won that war.

I did what I did so that the world would have to stop and think. Now you must think. Now you know what such a war looks like, have seen the inglorious horror of it. You no longer need to guess or imagine.

You are stupified by the loss of life and the wanton destruction, dumbstruck by the senseless slaughter, sickened by the suffering and death of the aftermath. Brought together by your collective outrage and disgust, you have unified to try me before the eyes of the world.

But do you remember that you try me for an act which you yourselves have contemplated and prepared for on a scale that dwarfs my poor effort? I am responsible for the deaths of ten million innocent souls, and may God have mercy on them and on me! But if you do as I have done and even ten percent of the peoples of Earth die, that will mean roughly five-hundred and eighty million such deaths.

You have seen the carnage. Can you imagine an aftermath fifty-eight times more terrible? Yet that would account for only one in ten of you! Such a war would not be so thrifty or kind. Eighty-some percent of the people living on the planet live in Asia, Europe, and North

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America, the likely fuel for what would burn. Can you truly imagine such a human conflagration?

I am a Christian, and I believe that Man is the Image of God, and so Man is worth saving in spite of himself.

It became obvious to me that someone had to do something before it was too late. I found myself with an idea as to how to provide an object lesson. I had the means. I prayed to my God for help, but he could not unburden me of my growing conviction that I had been marked to do this thing. The more I prayed, the more my conscience screamed that I could not pass this bitter cup. There was little time and the madness had to be stopped.

The peoples of the world have united to try me. The peoples of the world are united in their shock and disgust. That is what I prayed would come of this, and it is good! You are united in something at last, and I pray that what you have seen so sickens you that you demand that the madness ends. Maybe now that you have seen the true face of what you contemplate you will be able to choose, unlike those poor souls who died by my hand. They had no choice. You still do.

As I said when I began, I am a man of peace. I hope that I have shown you the value of peace by demonstrating the unavoidable results of the alternative.

Christ died for all our sins. I have sinned grievously and beyond all redemption so that perhaps all of you might live out the natural span of your lives. Judge me as you will, but for God's sake and your own, learn from what you have seen before it is too late.

Thank you, and may God be with you.

The man in the glass booth sat back and said no more.

Not long afterward the Judges left to make their decision.

The decision of the Court was not really in question.

The Judgement of history is much less certain. ■

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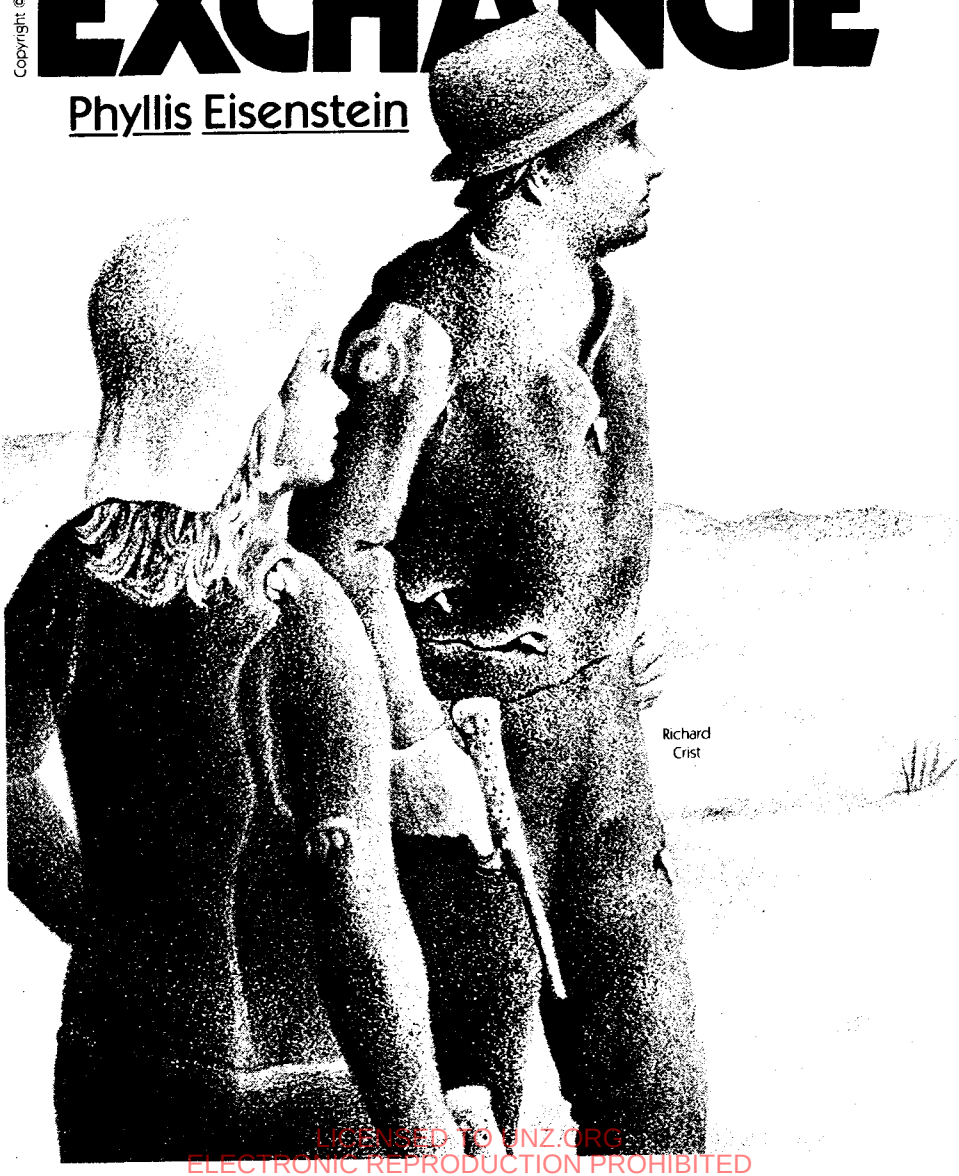

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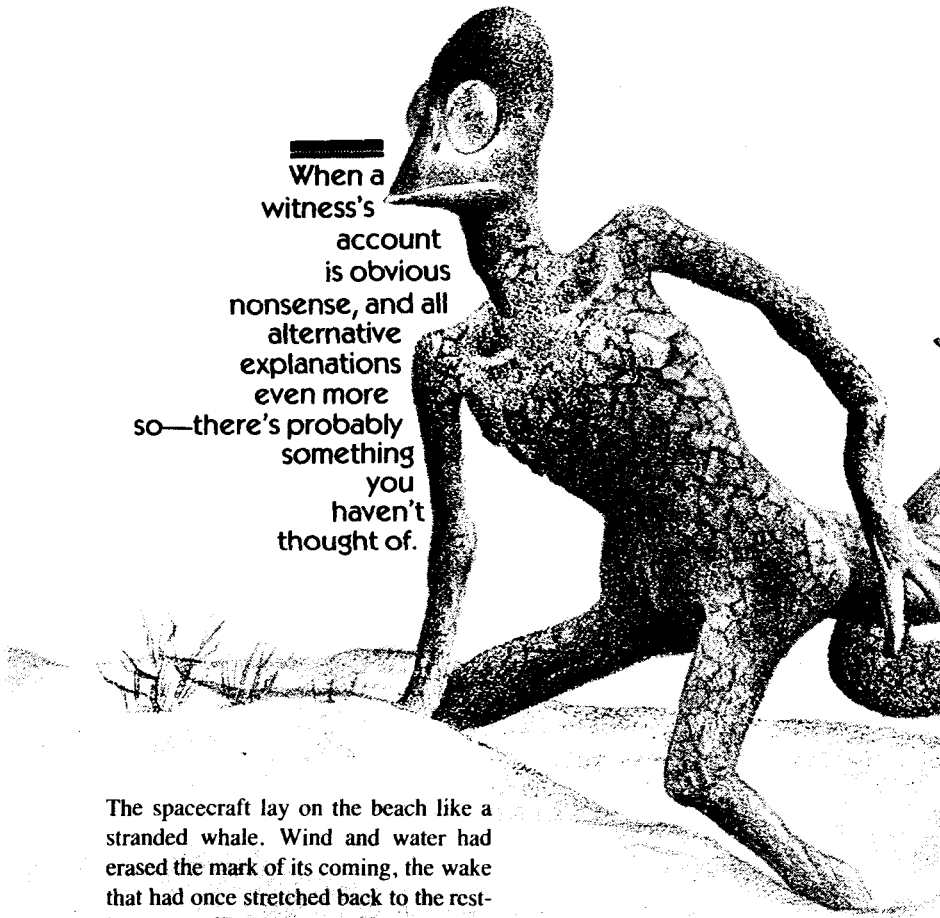
When a witness's account is obvious nonsense, and all alternative explanations even more so—there's probably something you haven't thought of.

The spacecraft lay on the beach like a stranded whale. Wind and water had erased the mark of its coming, the wake that had once stretched back to the restless waves like the trace of an enormous tail. Storm-blown sand had scoured and pitted the mirror-bright surface, till the symbol of the Interstellar Survey and the numerals that followed it were only the faintest of shadows against the dulled metal. But Karen Mills and Ben Shapiro knew what craft this was, and who had flown it; they were the rescue party.

"Looks like he braked on the water," said Shapiro, his big hands moving smoothly over the controls, bringing their ship about for another pass. He was a bear of a man, his neck almost too thick for the open collar of his uniform shirt, his densely-furred arms bulging below short sleeves. He had been with the Survey twenty years, most

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of them as a troubleshooter.

At the third pass he rang the exterior klaxon, and the deep, harsh sound made the cabin shiver. Outside, he knew, it could be heard for more than a kilometer. The inhabitants of that scatter of huts to the east would notice it, if they were capable of perceiving sound waves, but that couldn't be helped. If they had eyes they must have seen the ship already.

A fourth pass, long and low, and the shadow of the rescue vessel skimmed across the derelict like a swooping hawk.

Beside Shapiro, Mills played the bank of viewscreens like a musical instrument, shifting magnifications in a steady rhythm, switching radar and microwave frequencies with syncopated reality. She was methodical and thorough, and half a dozen Survey workers already owed their lives to her diligence. After the fourth pass, she leaned back on her couch and stared at the main screen with narrowed eyes. She caught a lock of her long, pale hair between the thumb and forefinger of one slim hand and brushed it lightly against her lips.

"Anything?" asked Shapiro.

She shook her head. "Not a footprint. Not a piece of garbage, either on top of the sand or under it." She wound the lock of hair around one finger. "A storm could have washed it all away, of course. But I don't see any recent debris." She glanced at her partner. "I don't think he's been here in quite a while."

Shapiro's voice was deep and thoughtful. "If he ever left."

Mills squinted at the screen that gave the closest view of the derelict. "It just doesn't look that bad. A few dents, a crumpled wing. I've seen people walk away from worse."

He shrugged his massive shoulders. "I've seen them buried from better. Metal's stronger than flesh."

"He tripped the emergency signal."

"He could have done it from the air, if he knew he was in trouble."

"Well . . . he's certainly not running down the beach waving at us." She drummed on the console with her free hand. "That settlement's a little too close for my taste. But it looks pretty quiet." One of the peripheral screens, focused on that area, had shown a few figures moving now and then, none of them human. "No clustering, no group movements. They don't seem to be impressed by the great metal bird with the loud voice."

"They've had a ship of their own for three years," said Shapiro.

"And maybe a Terran of their own." She scanned the beach up and down one last time; nothing stirred on the pale sand, nothing but the gentle surf. "All right, let's get down there and check it out."

They made a gentle landing less than twenty meters from the other ship. Though the screens still showed the beach deserted, they strapped on sidearms anyway and cracked the main hatch with caution. Outside, the sun was bright and glaring, and the warm air was tangy with the scent of salt. Shapiro hit the button that extruded a short ladder from the lower lip of the hatchway, and he went out first, weapon drawn. Mills

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followed a moment later, securing the hatch before she joined him on the sand.

They made a quick circuit of the other ship, finding no damage that had not been obvious from the air. The skin was intact and the hatches were all tight. No descent ladders were deployed, but some Survey workers preferred to keep them retracted, to discourage the curiosity of local life forms. Mills tapped the standard code on the main hatch, and the metal panel eased aside smoothly. Inside, the ship was pitch dark.

"Fredrikson!" she called.

There was no answer.

Shapiro reached into the opening to punch the ladder and interior lighting controls. The ladder thrust out, but the only lights that came on were the amber emergencies.

"I'll go in," said Mills. "Give me ten minutes."

He nodded, and as she climbed the ladder he moved away from the open hatch toward the nose of the ship, where he had a better view of both vessels and of the whole expanse of the beach. He turned slowly, scanning three hundred sixty degrees.

To the west, the ocean was empty to the horizon, not a sail showing, not a canoe, not a raft. To the east, the sand sloped upward gradually, smoothly, for fifty or sixty meters before it began to ruffle into miniature dunes held down by a thin scrub growth. This first line of vegetation, weedy tussocks of pale green, stirred gently in the salt-scented breeze, bending away from the sea like a line of dancers swaying to soft music.

One dancer caught his eye. It was slightly out of step. Someone or something was hiding behind that tussock.

It was still hiding when Mills came out of the ship.

"He's not inside," she said as she strode toward Shapiro. "But these were on the console." She held up a thick notebook and a pocket recorder.

Shapiro gave her only a sidelong glance. He nodded toward the suspicious tussock. "Company."

She looked in that direction, pale eyes searching the scrub. Automatically, she had shifted her burdens to one hand and reached for her stunner with the other; she drew it, but let it rest muzzle downward beside her thigh. "Animal or intelligent?" she said softly.

"I don't know, but I think it's time to find out." He took half a dozen slow steps up the beach, his weapon raised but not pointing anywhere in particular. "Hey, you!" he shouted. He waved his free hand. "We know you're there.

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Come on out!" He walked farther still and shouted again. He didn't expect the words to be understood, but he hoped the noise and movement would flush their visitor.

He was barely three meters away when it stood up suddenly, shedding the sand that had half-covered it. Two heads taller than Shapiro, it was slender and bipedal—a humanoid, according to the loose classification of the Survey, in spite of the brownish scales, the restlessly lashing tail, and the face dominated by a short, broad beak. It held up two long, multijointed arms, showing empty, four-fingered hands.

"You are Terrans?" it said in a high, thin voice.

Mills joined Shapiro, though she stood well to one side, flanking their visitor. "We are Terrans," she said slowly. "Do you speak any more of our language?"

"Yes. I speak much more. You have come for him?"

"For whom?"

"For the other Terran, Fredrikson."

The humans exchanged a single glance, and then Mills said, "Yes, we are looking for Fredrikson."

The creature bobbed its head, birdlike. "He said you would come someday. I will take you to him."

"Did he send you?" asked Shapiro.

"No, but I have been watching for you." It had large eyes set close together above the beak, and now they blinked slowly, their lids pale and translucent, like nictitating membranes. They looked from Shapiro's weapon to Mills's. "You are afraid of me?" it asked, the thin voice querulous. "He was not afraid when he first came to us."

"I am not afraid," said Mills, and she holstered the stunner.

The creature gazed at her for a moment and then took a step in her direction, just one step, but that single long-legged stride covered the whole of the intervening space. A scant arm's length away, it towered over the Terran woman, naked and unarmed save for whatever teeth and claws and strength evolution had given it. Shapiro aimed his weapon at its midsection; he had a clear shot even if it suddenly decided to grab Mills. But all the creature did was slowly offer Mills a scaly hand, and when she extended her own in reply, it clasped hers in a good approximation of the ancient human ritual of greeting and trust.

When they broke their contact at last, Mills asked, "Is Fredrikson well?"

"He is well. He lives in the village now. I will show you the way." Turning, their visitor started across the dunes.

The Terrans followed, Shapiro in the rear by a dozen paces, weapon still drawn. The low, tussock-crowned dunes gave way gradually to firmer, darker soil and denser vegetation, much of it standing higher than their guide's head, broadleafed, thick, and fibrous. But there was a narrow path cut through the tangle, making the kilometer journey an easy one.

From the air, Mills and Shapiro had seen the scatter of huts their guide called a village; it sprawled over a wide area and was laid out as a series of clearings, each containing a cluster of round, thatched huts set about a campfire, and each connected to two or three neighbors by narrow corridors through the tall

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brush. From ground level, no clearing was visible from any other; their guide led the Terrans through several, and each seemed to open abruptly from the undergrowth and to vanish again as soon as it had been left behind. Only the thin smoke of campfires betrayed their existence, and the narrow pathways were arrows pointing to their locations.

In five of these open spaces, slender, scaly natives were conversing with each other in a quick, breathy language, were tending fires or crouching over pots or baskets, were engaged in labors common to the pre-Industrial cultures of a hundred planets, while all around them, their children played, tumbling and noisy, like the young of a million other species. Briefly, as the Terrans passed, each group would interrupt its activities to look at the newcomers, but none made any attempt to approach them, or to communicate, and the Terrans' guide did not pause even to give a greeting. The sixth clearing was smaller than the others, a mere blister on the very edge of the village and a stark contrast to the rest. There were no natives working or playing in the bright sunlight here; there was only silence. Even the fire was dead. A single hut occupied the center of the area, its open, arching entrance taller than any Terran, and to this doorway their guide led Mills and Shapiro.

"Fredrikson," it said, pausing at the threshold, "the other Terrans are here."

The inside of the hut was dim, and for a moment all Shapiro could perceive as he leaned into the entrance was a shadowy form seated against the opposite wall. And then, as the form rose, he found himself thinking that he remembered Fredrikson as tall, from the few times he had seen him, but not this tall, never this tall.

"Mills, isn't it?" said the occupant of the hut. The voice was low, almost hoarse, and though it could pass for human, it issued from a beak. The slender, scaly, tailed creature extended a four-fingered hand. "And Shapiro, too. So they sent the best after me. I'm flattered. Welcome to Ichil'al, colleagues. That's the village, not the planet. The locals don't have a name for the planet."

Mills stepped forward and gravely shook the proffered hand. "We were told the Terran Fredrikson was here," she said.

The creature laughed quietly, a very human laugh. "You see him before you. Changed, I'll admit, but still himself."

Shapiro felt the hackles rising on the back of his neck, and his hand tightened on the butt of his stunner.

"Are you telling me that *you* are John Fredrikson?" said Mills.

"Absolutely."

She hooked a thumb in her belt, not far from her holster. "You know, you don't *look* very much like him."

The creature gestured toward the notebook and recorder tucked under her left arm. "Obviously, you haven't had a chance to go through the material yet. It's all chronicled there, in detail. How I watched two body exchanges without believing anything had happened. How I finally made an exchange myself and found out how real it was. It's been . . . quite an experience." The creature shook its head. "Not the sort of opportunity most xenologists get."

"Body exchange," said Mills.

"Yes, they exchange a lot of things here. It's the primary mode of social

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interaction. All done very formally —food, tools, bodies. You might think body exchange would complicate their lives impossibly, but they seem to manage it without any problems. They have a different concept of individuality, you see, of kinship relations, of—"

"What happened to the Terran body?" said Mills.

"Ah, yes, the Terran body." The creature's tail lashed about its legs for a moment, and then it turned half away from Mills and clasped its hands behind its back. "I wasn't here very long," it said, not looking at her, "when I got myself involved in the exchange system. It seemed the best way to fit in, and the locals were willing. But they didn't need my clothes, and they couldn't use my tools, so all I really had to exchange was my food.

"I shouldn't have done it, of course. Oh, I analyzed the local stuff, and it was perfectly safe for humans. But I didn't realize that *safe* was one thing and *nutritionally adequate* was something else. My own food was all gone before I realized I was having a problem with malnutrition. That was about a year ago." It glanced at Mills over its shoulder. "If I could have left then, I would have. But I'd made a bad landing, and the ship wouldn't fly. I knew a rescue team would come out eventually, and I hung on as long as I could, but I just kept getting weaker and weaker. After a while I could barely stand up. If I wanted to survive till you got here, I needed help. I needed nursing. And that was . . . something of a problem. Because I had no kin, no blood or marriage ties among the locals, and therefore no one to owe me any nursing. My only hope was to insert myself, somehow, into the native kinship structure. But you can imagine that, with my Terran body, I wasn't exactly a popular marriage prospect, even if I'd been strong enough to gather the appropriate gifts for the courtship procedure."

The tail lashed again, till the creature caught its tip in one hand and held it fast. "My friendliest informant—my first informant—was mentally unbalanced. Maybe that's why he took to me so readily; most of the time he lived in a world of his own, populated by more bizarre creatures than you'd want to imagine, and I probably seemed like just one more of them. Even his own kin thought he was too strange to associate with, except for his wife." The creature gestured at the other native, who stood quietly just inside the doorway. "His wife, faithful Gar'eah. She lit his fire, she cooked his food, she even cultivated his garden when he forgot to do it, which was most of the time. By the rules of their culture, she was married to his mind, she went where it went, whatever body it might inhabit. And he *wanted* to exchange with me. It was his idea. He'd been in the ship and seen all the marvels of Terran science, and *he* didn't doubt that a rescue team would come and cure my illness. And while he waited for them, in my body, she would take care of him, just as she had always done. It was his way of thanking me for my friendship, I guess." The creature looked down at its left hand, which still held the tip of its tail, like some strange flower. It let the tail go. "No one else would have done it for me."

The silence following that statement was so long that finally Mills said, "And here we are."

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The creature raised its head, and the nictitating membranes flicked slowly across its eyes. "Yes, here you are. We were going to re-exchange as soon as you arrived. But . . . the body didn't improve, of course, even with Gar'eah's care. And mine. Soon after the exchange, he became delirious, and then he went into a coma, and then . . . well, he's been dead for just about six Terran months now." The creature shrugged its narrow shoulders. "So I'm an eight-foot lizard.

"It's not as bad for me as you might think. Now that I've had some time to get used to it. I went on with my work for a while, but . . . lately I've found gardening to be more satisfying. And I've learned enough about the culture to fit in pretty well. The people seem to have forgotten that I was once in another body. I've even had some offers of marriage. I've . . . given the possibility some thought." It looked directly into Mills's eyes. "I can't really go home like this."

Mills stared back. And then, slowly, she said, "I've heard that John Fredrikson once took the C57 team for everything it had in an all-night poker game at Base. Can you tell me the names of those team members?"

The creature laughed very quietly. "Yes, I expected a test. But you're welcome to ask me anything you like. As I recall, Connor dropped out first, but Bauman and Lee stayed till the bitter end. Sorry, I don't remember how much I won. Next?"

Mills glanced back at Shapiro.

"Fredrikson could have told you anything," said Shapiro. "Especially if he was delirious."

"True enough. I don't think there's any way I can prove beyond a doubt that I'm him. On the other hand, does it really matter?" It pointed to the recorder and notebook under Mills's arm. "Those are the only things you'll be taking back to Base."

"One other thing, I think," said Mills. "If it still exists. The body." She eyed the creature that called itself a Terran. "Or did you burn it?"

"No, they have burial here. And more people came to see him buried than ever visited him while he was alive, poor guy. You'll find a detailed description of the ritual in my notes."

"They really considered him one of them?"

"He *was* one of them. And her husband." The creature waved a scaly hand at Gar'eah. "But I think she'll give permission for exhumation. They don't seem to care much about dead bodies once the burial ritual is finished."

Mills turned to the native. "It is a Terran body. We would like to take it home, if you will allow that."

"It does not matter to me," said Gar'eah. "I will show you the grave. It is not far."

"Thank you."

Gar'eah slid past Shapiro into the sunlight and paused there, her beaked face gazing back at the Terrans over one sloping shoulder. "I will show you now," she said.

"Yes, of course." Mills went outside. But when the creature that called itself Fredrikson did not follow, she turned back to the hut. "Aren't you coming along?"

It stood inside, in the shadow, toying with the tip of its tail again. "No, I

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don't go out in the daytime. Too many people I'd rather not encounter."

"I thought you were getting along well with them."

"It varies."

"Then . . . we'll see you later."

"If you wish," said the creature.

Gar'eah led the Terrans, not to the path that connected this clearing with others, but in the opposite direction, straight into the undergrowth. They pushed their way through the thick vegetation, fighting fronds that whipped at their faces and roots that seemed to spring out of nowhere to tangle their feet, until the native stopped suddenly.

"Here," she said, pointing to the ground.

No mound, no cairn of stones, no chiseled tablet marked the place, yet it was easy enough to see—in the midst of luxuriant greenery, it was a roughly oval patch of soil, perhaps a meter and a half across, dry and cracked and barren.

"You must come here often," said Mills, "to keep the grave so clean."

"We do not keep graves clean," said Gar'eah. Her tail lashed behind her, stirring the underbrush. "I think perhaps the forest does not like the Terran body. You are right to take it away."

Shapiro squatted beside the grave and felt the soil. It was hard-packed, not easily gouged with naked fingers. "We'll need a pick to get down through this."

Mills scuffed at the barren surface with the toe of one boot. "Gar'eah," she said, "did you ever eat any of the Terran food?"

"Yes."

"And . . . did it make you sick?"

"No. But I ate only a little, because it tasted unpleasant."

"Did others of your people find it unpleasant, too?"

"No one cared to eat any more than I."

"Yet they exchanged quite a lot of their own food for it."

Gar'eah bobbed her head. "For the sake of courtesy."

Shapiro looked up at Mills. "Does that notebook have any blank pages in it?"

She opened it and found several at the back.

"Tear one out for me, will you?" When she had handed him the sheet, he carefully set his stunner down within easy reach. Then, ripping the paper in half, he scraped some of the dry grave soil onto one half and some of the moister soil from beneath a bush onto the other, and, folding each piece into a small packet, he tucked both into his shirt pocket. "All right." He straightened up with the weapon in his hand once more. "I think we should get this finished before the sun goes down."

Though their homing compasses could have brought them back to the ship without her help, they let Gar'eah guide them by the easiest path, a narrow trail that could be reached after only a brief thrashing through the undergrowth, and which bypassed the village completely. Once they were on that track, their attention no longer monopolized by entangling foliage, Mills walked close behind the native to talk to her.

"You seem to speak our language very well, Gar'eah. Whom did you learn it from?"

"Fredrikson," replied the other.

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"I assumed that. I meant, *which* Fredrikson."

"There is only one."

Mills hesitated just an instant. "All right, let me try that again. Did you learn the language before or after your husband and the Terran exchanged bodies?"

"Some before," said Gar'eah, "because my husband liked the language and wished to practice speaking it with me. And some afterward, because he preferred not to speak our own language once he had the Terran body."

"You mean, he never spoke your language after the exchange?"

"Almost never."

"Well . . . why do you think that was?"

Gar'eah glanced over her shoulder at the Terran woman, just a brief glance. "As Fredrikson said, he was mentally unbalanced. No one can understand the mind of such a one."

"But you were his wife," said Mills. "Surely, if anyone could understand him, *you* could."

Gar'eah made no reply.

"You must think *something* about it."

Instead of answering, the native lengthened her stride, and the Terrans had to run to keep up.

"I'm sorry," Mills said, as her breath started to quicken. "I have no wish to make you angry with these questions. But my colleague and I came very far to find Fredrikson. He is important to us. We wish to understand what has happened to him."

"He made a bargain," said Gar'eah, her own breathing as steady and effortless as her pace. "It was a good one for him and a bad one for my husband. I would like to think that he did not know his Terran body would die soon. I would like to think that." She stopped then, so suddenly that Mills bumped into her and Shapiro, a few steps farther back, nearly struck them both. Turning her beaked face to the Terran woman, Gar'eah said, "I know who you are." Her voice, though thin and high as a child's, was firm. "You are Fredrikson's wife."

"No," said Mills.

"There is no need to lie to me. I knew that if anyone came for him, it would be you. I knew that you would take him away, and I would never see him again. Take him, then, and leave me alone. The path leads to the beach. You will see your ship there. You have no further need of me."

Mills shook her head. "I don't understand, Gar'eah. Please help me to understand."

Gar'eah raised a four-fingered hand to Mills's shoulder, clutched it for a second, and then gave her a hard shove in the direction of the beach. "You have the soft Terran skin and the fine Terran hair," she said. "My husband liked these things. He wanted them for his own. His mind was too sick to understand that they would give him death."

"I am so sorry," whispered Mills. She had only let the push propel her two paces down the path. Now she faced the native, who stood between her and Shapiro but looked down only at her, steadily, great eyes as bright as polished black glass. "Believe me, I wish we had come before all this happened."

Gar'eah's beak opened wide and a hiss emerged, longer, louder, and more

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vibrant than any Terran snake's. It was a sound as unhuman as the other creature's laugh had been human, and it made Shapiro edge off the path and circle their towering guide so that he could stand near Mills. It raised goosebumps on his arms and made his hand tighten on the stunner.

Gar'eah's voice was thinner than ever now. "No one else wanted me. I had been married three times and thrown away three times because of barrenness. But none of that mattered to him. He was willing to take me. And now he is dead, and I have no one. Even Fredrikson, the Terran, will not have me. So take him away, take him back to Terra. And take his dead body as well. Perhaps your wonderful Terran science can find a way to bring it back to life and give it back his mind. Then your mating with him will not seem so grotesque!" And she turned from them and stalked away, her tail lashing wildly among the plants that bordered the path.

For a moment, Mills and Shapiro looked after Gar'eah's retreating form, and then Shapiro said, "Maybe they're *both* mentally unbalanced."

Mills shook her head. "Let's get back to the ship." She slapped the notebook. "I'm tired of dragging this stuff around."

Inside the ship, while Mills searched the hold for pick and shovel, Shapiro ran an analysis of the two soil samples.

"Anything interesting?" she said as she brought the tools into the forward compartment.

Shapiro was leaning over the readout, one thick arm resting on either side of the screen. "I thought maybe someone had sown salt on the grave, or some other poison. To make it look like his body chemistry was incompatible with the local flora. To substantiate the malnutrition story."

"That's pretty sophisticated thinking for a culture at the thatched hut level."

"Our lizard-Fredrikson talks a sophisticated line."

"Yes, he does." She leaned on the handle of the shovel. "You think they might have killed him?"

"The possibility occurred to me. But there's no evidence of poison in the grave sample. Unless you count a few trace minerals always found in the human body. Trace minerals missing from the sample that had a plant growing in it."

"Which supports the malnutrition story."

Shapiro nodded.

"It's a good story," said Mills. "Plenty of xenologists have gotten into trouble trying to fit into native cultures."

"Oh, yeah, it's a great story. Except for who's telling it." He switched off the analyzer. "Come on, let's get the body, and then somebody back at Base can tell us what killed him."

They worked at the grave one at a time, Mills loosening the surface with the pick, Shapiro scooping the clods out with the shovel. After half a meter the soil became less dry, and Mills switched to a sharp trowel. The body was buried only a little deeper.

"He's pretty badly decomposed," she said, scraping carefully with the edge of the trowel. "But his uniform is a testimonial to synthetic fabrics. Maybe it'll keep him from falling apart when we lift him. Come on, this is going to take both of us."

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The body lay in fetal position, the head bent almost to the knees. Nearly all the flesh was gone, just a few ligaments holding the bones together, the teeth showing large and pale in the naked skull. With great care, Mills and Shapiro were able to slide the body—and a good deal of the surrounding soil—into the bag they had brought along. The bag had supports that transformed it into a litter for two people to carry. Mills took the front.

The whole bundle went into their ship's freezer.

"End of rescue mission," said Shapiro, securing the freezer door.

Mills leaned against the panel, arms folded across her chest. "You think it's ended?"

"Except for saying goodbye to the locals. And maybe putting that poor lady lizard's mind at rest about you and her eight-foot heartthrob."

"Yes," she said thoughtfully. "She does seem to be attached to him."

"Wives often are attached to their husbands, cross-culturally speaking, even if they're both crazy."

She frowned slightly. "You don't believe it, do you? This body exchange business."

"I'm willing to believe that our two lizards *think* it happened. But the fact that the Terran body wouldn't speak the local language after the so-called exchange makes me just a little skeptical."

"He was delirious."

"Between delirium and craziness, you could find an excuse for almost anything."

Mills pushed away from the freezer door. "I want to look at his notes before we leave. And then I want to talk to the lizards again." She headed for the forward compartment.

Shapiro watched her a moment, and just as she reached the hatch between the cargo bay and the control cabin, he said, "You don't really think. . . .?"

"We can't leave him here without being sure," Mills answered. "We just can't."

The notebook was as thick as a novel, and the recorder had a dozen hours of material on it. Leaning back on her couch, Mills immersed herself in both, co-ordinating them by date. Shapiro listened for a time, and read over her shoulder, but it was dry stuff and at last he lost interest. He had always preferred field work to library research. He made supper for the two of them and ate outside, watching the sun set over the ocean, while Mills continued to read and listen. She was still engrossed in Fredrikson's records when Shapiro decided to make his couch up for a sleep period.

He woke to her voice calling his name. Blinking blearily, he focused on the console chronometer and confirmed that he had not slept long enough. Mills herself was pouchy-eyed; obviously, she had not slept at all.

"Look here," she said, thrusting the open notebook in front of his face. "The notes go right up to two months ago, all in the same format, the same sentence structures, the same word choices —I'd swear it was all written by the same person."

"Two months ago?" Shapiro said groggily.

"But the *handwriting*." She leafed back a dozen pages. "The handwriting changes six months back. Here—from

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one page to the next, with about a week between entries."

Shapiro rubbed his eyes hard and then took the book from her hands. The writing changed indeed, from a tiny, precise, almost crabbed script to a more sprawling hand; yet the two styles were similar, as if the second writer had tried to copy the first, but with less control over the pen.

Shapiro read a few lines on the later page. "What is this?" he said, tapping the sheet with one finger.

"Description of the body exchange ceremony. From a participant's viewpoint."

"Written by—"

"The lizard. It says so at the end. The lizard who says he has Fredrikson's mind, and whose sentence structure is just like Fredrikson's."

"Well, he did learn Terran from the man."

"Then he must have learned how to be a xenologist while he was at it, because this looks like pretty good work to me. A lot more objective than you'd expect from a member of the culture."

Shapiro shrugged. "Maybe that means we should recruit lizards for the Survey."

Mills took the notebook from him and inspected the transition pages again. Then she closed the book and tossed it on her own couch. "I've got to talk to him," she said. "Do you want to throw some breakfast together while I shower?"

"Talk to him?" Shapiro propped himself up on one elbow. "It's the middle of the night. Don't you think you should get some rest first?"

"No, we've got to get this nailed down. It'll be close to daybreak by the time we get back to the village; the locals should all be up." And she turned and headed for the shower.

The sky was barely grayed by dawn as they reached the village, but the natives were indeed beginning to stir, lighting their fires, talking among themselves. As before, they watched the Terrans pass, but none made any attempt to approach. Mills and Shapiro found the clearing of the single hut without difficulty. There was no fire there, no noise, but they had not expected any.

The hut was empty. Mills scanned it with her pocket flash to be sure.

"Maybe he's having breakfast with somebody else," said Shapiro.

"All right, we'll wait." And she settled on the bare ground, cross-legged, beside the hut entrance.

The sky had brightened, though the sun had not yet crept above the horizon, when the creature that called itself Fredrikson entered the clearing. It came from the brush, not from any path, and when it saw the Terrans it halted abruptly, one step into its own domain.

"Well, hello," it said. "I didn't expect you so early."

"We had a few questions," said Mills, climbing stiffly to her feet. "We thought it would be best to get them out of the way as soon as possible."

"Whatever you like, colleagues." The creature glanced back over its shoulder. "Shall we go inside?" It waved toward the hut.

"Why not stay out here?" said Shapiro. "It's warm enough."

"No, I don't want them watching us." It tilted its head to indicate the brush at its back.

Shapiro turned his flash on that area

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but saw nothing beyond thick vegetation. "Who?" he asked.

"Oh, just some unpleasant characters who like to follow me around in the daytime. Don't pay any attention to them."

"Are they dangerous?"

"No, just annoying. Come on, let's go inside."

The hut was very dark, so Shapiro set his flash at the center of the hard-packed earthen floor, and the three settled themselves in a ring about the light.

"We haven't made a judgment on what you've told us," Mills began, "and I'm not sure we'd want to. But we have to take as much evidence as possible back to Base. For the benefit of future visitors."

"Yes, of course," said the creature. "I wouldn't want anybody else to get himself into a situation like mine. Not without fair warning."

"I've seen your files, of course. That is, Fredrikson's files. And I talked to a few of his friends. So I have a pretty large data base to work with. For questions."

"Whenever you're ready," said the creature.

She asked for Fredrikson's mother's maiden name, his birthplace and year, the names of his universities, the catalogue of his degrees, the titles of his published monographs, and more, much more. Shapiro kept silent the whole time. He remembered her glancing through the file for five or six minutes, and he doubted she could remember most of the information she was demanding. For all she knew—certainly for all Shapiro knew—the creature was inventing most of its answers. Though, if so, it had obviously picked up enough from Fredrikson to make them plausible.

Then Mills asked the important question, though it sounded innocent enough: "You had a cat back at Base. What was its name?"

The creature's very human laugh was soft, as always. "Very clever, Mills, to try to catch me on a nonexistent fact. But I've never had a cat in my life."

Mills sighed. "You're very good."

"You half believe me, don't you? Just half."

"I'm half convinced that *you* believe you."

The creature caught the end of its tail in both hands and rolled it between the palms, back and forth, back and forth. "You know, no matter how many questions I answer correctly, no matter how many names and dates and places I rattle off, people will always doubt me. I understand that. They'll wonder if it was just a trick, if I just learned it all from the real John Fredrikson. They have marvelous memories, you know, those eight-foot lizards." It gave a deep sigh. "Well, I am what I am, and I'll just have to make the best of that. I figure I'll volunteer to be the Survey's resident expert here. I might even marry and teach my children Terran, so that someday, when my former people come back to this planet, there'll be a flock of ready-made interpreters waiting for them. The Survey ought to appreciate that." It shook its head slowly. "I haven't got any more to give."

For a moment the three of them were very quiet, and then Mills laid her hand on the lizard-Fredrikson's scaly arm and said, "Who are you? Really."

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The beaked face turned to her. "It doesn't matter, does it?"

"It matters to me."

"Oh, yes. I suppose it does. You have an excellent record for rescues. A decomposed body won't do that a lot of good."

"No," she said, her hand still gripping his arm. "I'm just thinking if you *are* Fredrikson, if we leave you here, a human stranded for the rest of his life in an alien culture, in an alien body . . . will I ever be able to sleep again?"

The creature pressed Mills's hand. "Thank you for half-believing," it said. "But the choice is mine, whoever I am. Now why don't you get out of here before I start making the funny noises that lizards make instead of crying? Go on. Go back to Base. You've done your job."

Mills and Shapiro stood up.

"Is there anything you need?" said Mills. "Anything from our ship's stores that we can leave you?"

"No. Nothing."

"Do you want to walk us to the beach?"

"No, it's almost daylight."

"All right, then. Goodbye. And good luck to you." Mills stuck out her hand, and the lizard-Fredrikson did not need to stand up to reach it.

The Terrans hiked back to the beach in silence, a silence that Shapiro broke at last as he opened the main hatch of their ship. "You have to admit he made it easy for us. He could have asked to be taken back to Base."

"At least that would have dumped the problem into somebody else's lap," said Mills.

"It isn't our problem any more."

"Isn't it?" Standing on the lowest rung of the ladder, she looked over at the other ship, the derelict. "No one else is going to take it on. It'll just go into the books, a little peculiarity, nothing important. A dozen years from now, or fifty, or a hundred, the Survey will get around to coming back here. It certainly won't be important by then." Her eyes narrowed suddenly, and she pointed up the beach. "Look there."

A native was running toward them, long legs flashing, tail held out almost horizontally behind it; no human could have run half so fast. "Wait! Wait!" it shouted. The voice was thin and high: Gar'eah's. "Don't leave yet, Terrans!"

Mills and Shapiro stood by the ladder as she came up. Her chest was heaving, her beak was open wide, and the sound of her breathing was loud.

"He says you are not taking him," she gasped.

When Mills said nothing, Shapiro answered. "No. He doesn't wish to go."

"You will not force him?"

"No, that's not our way."

Gar'eah lifted a hand hesitantly, barely touching Shapiro's sleeve. "Then take me," she said. "I have no wish to stay here any longer."

Shapiro frowned. "You don't know what you're asking, Gar'eah."

"Your people can learn from me. I know they wish to know about us. I will teach them all our ways. And I will learn from them, too, and see the many marvels Fredrikson has spoken of. It will be a better life than I have here. Oh, take me with you, Terrans, for if I stay I will die of loneliness!"

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"You would be lonely among us, also, believe me. Much more lonely."

"You would not say that if you knew how it has been for me."

"But Gar'eah, we could not feed you. Our food will make you sick."

"I can bring my own if you will wait just another day while I gather it."

"But you might never be able to come back to your own world."

"That does not frighten me. I do not wish to come back."

Shapiro turned to Mills. "Give me some help here."

On the first rung of the ladder, Mills was still shorter than the native. Looking up into that scaly, beaked face, she said, "Do you really want to go?"

"How many times must I tell you so?"

"You are asking to visit some very strange places, Gar'eah. It would not be easy for you."

"I am not afraid."

"Would you be afraid . . . to visit them in another body?"

"What?" said Shapiro, but Mills signed for him to be quiet.

"I will exchange bodies with you," Mills said to Gar'eah, "and then I will stay here as one of your people while you return to mine."

The native stared down at her, and the nictitating membranes passed slowly across her great eyes. "He will not be your mate," she said at last. "As I told you before, this body is barren."

"I don't need to be his mate. But there should be one of his own kind nearby, to talk to him and give him comfort in ways that your people cannot."

"You are not afraid?" said Gar'eah.

"No."

Shapiro caught her arm in a hard grip. "I want to talk to you. Alone."

Mills didn't even give him a glance. "Please wait for us here," she said to the native. "We won't be long."

Inside the ship, Shapiro stood with his back to the closed hatch. "You're not serious," he said.

She met his gaze coolly. "I have to know. What other way is there?"

"It's nonsense. I'm not going to take a local back to Base, even if it is in your body. Central would have my head."

"You half-believe it, too, don't you?"

"I don't know what to believe. But I do know that if it is real, what Fredrikson did was an act of desperation. What you'll be doing is insanity."

Her lips pressed together whitely for a moment. "We can't just abandon him. We're a *rescue team*, after all."

"He's willing to stay."

"He's resigned to staying. Not quite the same thing."

At his sides, his big hands curled into fists. "All right, go ahead, try to make the exchange. And if it turns out to be real, you can change right back again, and we can get out of here."

"That isn't the bargain Gar'eah wants."

He struck one fist against the hatch. "We're talking about your life here!"

"No, we're talking about Fredrikson's."

"No one in the Survey would expect you to do something like this!"

She stared straight into his eyes. "*I'd* expect it."

"We haven't failed here!" he shouted. "There's a body in the freezer to prove that!"

"I'm not thinking of my reputation."

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"I'm not sure you're thinking at all!"

Mills set her hands on her hips. "Stand away from that hatch."

"Listen to me," he said urgently. "You're tired. You didn't get any sleep last night. Take a pill and get some rest, and we'll talk about it when you wake up."

She shook her head. "Not that I don't trust you, not that I think you'd put as much space as possible between us and this planet while I was asleep . . . but I've made up my mind." Her right hand slid to the butt of her stunner. "Now, do I have to shoot you to get you away from that hatch?"

For a moment he stood there, teeth clenched almost to the point of pain. Then, very slowly, he stepped aside.

She eased the hatch open and climbed down the ladder. "If you wish to exchange bodies, I am ready," she said to Gar'eah. "Can it be done immediately?"

"Yes. Of course," replied the native. "Come to my hut."

They started off down the beach.

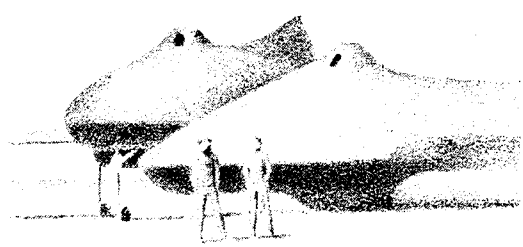
Shapiro secured the hatch and ran to catch up with them.

"You want to watch?" Mills said as he reached her side.

"Wouldn't miss it for worlds," he told her.

Everything was ready in less than an hour—a very small fire lit in front of the hut in the tiny clearing that was Gar'eah's own, and two circles marked on opposite sides of the fire. That was all. Gar'eah and Mills knelt, each on one of the circles.

"Shouldn't your friend Frederikson be invited to watch this?" said Shapiro. He stood well to one side, almost at the



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edge of the clearing. "After all, you might say he has a vested interest in it."

"He does not go out of his hut during the day," said Gar'eah.

"Not even for this?"

"Not for anything."

"Oh, surely he could brave a few nasty words from his neighbors for something this important."

Gar'eah did not turn her face toward him. She was prodding the fire with a long stick. "It is not his neighbors that he wishes to avoid."

"Who is it, then, who could keep him cooped up in that hut all day long?"

"He says they are very unpleasant people, very strange looking and strange acting. I have never seen them myself. But he fears them. It is a very strong fear. He does not like to talk about them."

"You've never seen them," said Shapiro.

"No."

"Has *anyone* ever seen them, besides him?"

"I do not know."

"Your husband, perhaps?"

"Perhaps," said Gar'eah. "They were together a great deal, he and Fredrikson."

"Karen," he said, and in two strides he was at Mills's side, his hand on her shoulder. "Don't you see what Gar'eah's saying? Do you think insanity is contagious?"

She gave him the briefest glance. "Maybe it is. Stress can make the mind do a lot of weird things."

"Listen to me—call it off. Don't you see that it's not Fredrikson? It's a good imitation of Fredrikson, that's all. This isn't going to work."

"Then stop worrying about it and let us go on with our business." And when he did not move, she shrugged his hand off her shoulder and gave him a push in the stomach.

Reluctantly, Shapiro backed away.

The fire was so small that, kneeling on either side of it, Gar'eah and Mills could join hands around it. They stayed that way, looking at each other's eyes through the heat shimmer for some minutes. Then, almost at the same instant, they began to hum, each on her own separate note: Gar'eah's high and thin, with a buzzing quality to it, Mills's much lower. At first, the two sounds seemed to blend harmonically, but gradually the tones altered, began to approach each other, passing through dissonance to harmony again and dissonance again as they moved nearer and nearer. Finally, both Gar'eah and Mills were humming the same note, a middle tone made eerie by the differing qualities of their voices. They stopped together, suddenly, and the silence that was left behind made Shapiro ache for something to fill it. Almost, he spoke. Almost.

Mills and Gar'eah separated slowly, turning from each other and from the fire, their heads and arms sagging, eyes drooping shut, as if the effort of humming had exhausted them both.

Gar'eah was the first to stand, to stretch like a person waking from a deep sleep, to open her eyes. She looked down at herself for a long moment, then lifted her scaly hands before her face and rotated them, flexing the long fingers. Her beak opened to emit a low, throaty laugh.

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"So it wasn't going to work, was it?" she said.

Shapiro felt his flesh prickle. The quality of her voice had changed. It was lower now, fuller. And almost . . . almost familiar.

"Who are you?" he said.

"Who do you think? Or shall I tell you your mother's maiden name just to give you a clue? It was Gilmartin, as I recall. And you were born in St. Louis."

"My God," said Shapiro.

"All right, we know now that he *is* Fredrikson, so you can make a thorough report on the situation when you get back to Base. Don't take any of the blame for this yourself; tell them I did it over your objections. They can break me if they want. I don't care. I've done the right thing." She looked down at the Terran body, which still knelt on the ground, eyes closed. "I think you'd better look after her. She's not taking the exchange as well as I am." The lizard-Mills stretched again. "This is a strong body. I'm going to be all right."

Shapiro squatted beside the Terran body and tipped the face up with one hand. The eyes were closed, closed tightly, with a crease between the brows. As he cradled the jaw in his palm, the body suddenly went limp and sagged against him.

"I think she's fainted," he murmured.

"Maybe you'd better take her back to the ship and give her a stimulant," said the lizard-Mills.

"Maybe." Gently, he tried to peel back an eyelid, but it was still shut tight.

"I'm a little sorry to saddle you with her," said the lizard-Mills. "I hope you won't have too hard a trip back to Base. She's bound to ask a million questions. On the other hand, she'll undoubtedly be a totally naive card player." She waved brusquely with one hand. "Go on. Don't worry about me. I'm going to be all right."

Shapiro hesitated. "I want to see you settled in."

"Take care of her first. She needs it."

"Karen," he said, looking up at the eight-foot lizard that loomed over him. He stretched a hand out to her, and she took it in a firm, four-fingered grip.

"Go on now," she said. "I have to break the news to Fredrikson."

Shapiro slung the Terran body over one broad shoulder and, carrying it like a sack of laundry, hiked back toward the ship. As ever, the natives he passed watched him but made no attempt to approach. Was that courtesy, he wondered—the same courtesy that had made them trade their food for Fredrikson's, even though they couldn't eat it? The same courtesy that could lead them to accept a stranger among them, so long as that stranger acted reasonably sane? He hoped that was true, for Mills's sake.

He was crossing the dunes when the body over his shoulder said, "All right, you can put me down now." The familiar voice held no trace of feebleness.

He let her slide to the ground.

"Let's get to the ship," she said, and she set their pace with long-legged strides. "I didn't faint, of course. But you knew that, unless you were just trying to poke out my eye. It seemed the simplest way to get out of the situation."

After a moment, he said, "Why

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would you want to get out of the situation?''

They reached the ship, and the woman tapped the standard code on the hatch. Then she looked at Shapiro. ''She has you fooled, doesn't she? Even with me standing right here beside you. *Well*, now I know why the Terran body kept speaking Terran after the exchange. *My* mother's maiden name was Olvera, and *I* was born in Syrtis City.''

Shapiro stared at her. ''You can't both be Mills,'' he said.

''No? Why not? One original and one copy.'' She leaned against the ladder. ''I've got it figured now. They don't actually exchange bodies. They just each copy the other's mind. Well, it comes to the same thing, doesn't it? Except where Terrans are concerned. Because we don't have the ability to copy someone else's mind. So Fredrikson, delirious and speaking Terran, died, leaving a simulacrum of himself behind.'' She shook her head sharply. ''You were right when you tried to stop me. He *is* an imitation; there *is* someone else underneath the Fredrikson personality, someone who sees things that don't exist: Gar'eah's husband. Maybe someday he'll break through the surface and replace Fredrikson.''

''Or maybe you were right,'' said Shapiro. ''Maybe his insanity was contagious.''

She gripped the top rung of the ladder and looked up, into the ship. ''I hope that's not true,'' she said. ''It was a stupid, thoughtless thing to say, and I hope very much that it was wrong. Because if it's true, then I've killed Gar'eah, just as surely as if I'd blown her head off.''

Shapiro watched her climb the ladder, then followed and paused to seal the hatch behind them. By the time he reached the forward cabin, she was lying on her couch, clutching Fredrikson's notebook in her arms, staring upward at nothing in particular.

He set his hands on the back of her couch. ''I can't think of a single expedition where something didn't go wrong. Can you?''

''I'm not blaming myself,'' she said with a sigh. ''I did what I had to do.''

''I'll start punching the co-ordinates for Base.''

''No. Not yet.''

''No?''

''You told her you wanted to see her settled in. We don't want her to think anything has changed since we left the village today. I'll stay in the ship. I don't trust myself to do a decent lizard imitation. You can tell her I'm a little bewildered at being a Terran, but I'm adjusting.''

He hesitated, looking down at her face. She seemed pale, but that might just have been from lack of sleep; there were dark pouches under her eyes, and bloodshot traceries upon their whites. He said, ''No, I suppose we can't tell them the truth, can we?''

She closed her eyes. ''Would you want to hear that you were just a copy of someone else?''

''I wouldn't believe it.''

''Neither would I,'' murmured Mills. ''Lizard or human, neither would I.'' ■

● Put all your eggs in one basket, and WATCH THAT BASKET Jerry Buchmeyer

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the reference library

By Tom Easton

Child of Fortune, Norman Spinrad, Bantam, $16.95, 496 pp.
The Remaking of Sigmund Freud, Barry Malzberg, Ballantine/Del Rey, $2.95, 288 pp.
Helliconia Winter, Brian Aldiss, Atheneum, $17.95, 289 pp.
The Glass Hammer, K. W. Jeter, Bluejay, $8.95, 248 pp.
The Sword and the Eye, Justin Leiber, TOR, $2.95, 252 pp.
Black Star Rising, Frederik Pohl, Ballantine/Del Rey, $15.95, 288 pp.
Diasporah, W. R. Yates, Baen Books, $2.95, 320 pp.
Best SF of the Year 14, Terry Carr, ed., Gollancz; David & Charles Inc. (North Pomfret, VT 05053), $16.95, 384 pp.; TOR, $3.50, 384 pp.
The Science Fiction Yearbook, Jerry Pournelle (with Jim Baen and John F. Carr), ed., Baen Books, $15.95, 352 pp.
Mervyn Peake: A Personal Memoir, Gordon Smith, David & Charles Inc. (North Pomfret, VT 05053), $19.95, 128 pp.
Exploring Fantasy Worlds, Darrell Schweitzer, ed., Borgo Press (P. O. Box 2845, San Bernardino, CA 92406), $6.95, 112 pp.
Robotics, Marvin Minsky, ed. (an Omni Press book), Doubleday, $19.95, 317 pp.
Melancholy Elephants, Spider Robinson, TOR, $2.95, 245 pp.
The Cat who Walks Through Walls: A Comedy of Manners, Robert A. Heinlein, Berkley, $17.95, 384 pp.

In **Child of Fortune**, Norman Spinrad returns to the cosmos of *The Void Captain's Tale*. On his last visit, I criticized his heavy use of foreign words and phrases, sprinkled throughout his prose in a way that reminded me of the false erudition of decades ago. After my review, he wrote me a lengthy letter objecting to my blindness—he had been striving to invent or simulate an evolved version of English, with generations more of borrowings from other tongues. That much was clear, but I did feel that

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his simulation was too heavy-handed to be successful. Now I wonder if he had second thoughts, for though he does the same thing again, he does it with a lighter hand, and the effect is far more friendly to the modern reader. He gives the flavor of a much-evolved language without burdening our eye. At the same time, he has not totally given up: he speaks of the language of his tale's time as if everyone has his or her own personal dialect or "sprach of Lingo," and occasionally he tosses in a character whose sprach is as impenetrable as ever.

So much for surface. What is the story? Spinrad gives us a picaresque novel that may well be SF's equivalent of Fielding's *Tom Jones*, a long, witty, wonderful tale of maturation told by his protagonist as she looks back from her position as a successful novelist (or the future equivalent). That protagonist began life as young Moussa Shasta Leonardo, a child of privilege on a backwater world who had prolonged her adolescence quite enough. The tale begins when it is time for her wanderjahr, that rite of passage pursued by all future youth, lasting months or years, taking the wanderer far or near, depending on funds and inclination. The wanderjahr is a time for finding oneself and choosing a name and adult role before embarking on higher education and career.

Moussa's wanderjahr takes her, without excess parental support, to a world of inbred confusion, a carnival, and a psychotropic jungle. She learns to manipulate people with a newfound gift of gab and begins to learn the trade of ruespieler (storyteller) for ruegelt (pay). She loves and loses, goes hungry, taps a wealthy meal-ticket, blows her mind, and regains it thanks to an awesome determination. As we see her, she is a charming waif who emerges to adulthood by pursuing the vision of the Yellow Brick Road (of wandering, of striving).

It is tempting to read into *Child of Fortune* something of autobiography. Spinrad *is* a child of the sixties, and it is easy to speculate that, like Moussa and her friends, he was once concerned with no more than getting high and laid, with perhaps half an eye, half the time, on finding himself. Surely, he too felt the drive to become a ruespieler, and as he pursued that particular Yellow Brick Road, he in time came to his present estate, honored elder of the ruespielers' tribe. I do not hesitate to recognize his status, and then to say that I enjoyed *Child of Fortune* immensely. I recommend it to you.

Barry Malzberg's **The Remaking of Sigmund Freud** is a very different sort of book. Here Malzberg rewrites history, giving Emily Dickinson cheap fame and a life of affairs outside her Amherst home and letting the media murder Sigmund Freud rather more literally than actually happened. Then, with this for past, he posits a future in which technology has equipped spaceships and colonies with the ability to "reconstruct" selected persons from the past for their more vigorous, less biased, creative insight into crises. Freud is in the bank of those available for reconstruction, as are Dickinson, Mark Twain, Adler, Jung, and more.

It's a novel conceit, and for it I admire Malzberg. For what he has done with it, despite a certain opacity to the writing—an intellectuality that may limit his accessibility to many readers, especially the young—I admire him still more. He has centered the story on Freud's reconstruction to help a starship crew which seems to be falling into assorted psychoses—the paranoid captain believes the breakdown is due to rays em-

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anating from the Vegans that dwell on the barren worlds they are assigned to explore. Dickinson and Twain are also revived, but they play only bit parts; we are invited into the mind of Freud alone as he confronts the issue of his own—and others'—dehumanization, faces futility, and finally, supreme alienist, meets the aliens who live outside the human soul. Asked to cure the Vegans of their psychosomatic handicaps, he produces a glorious proof of the power of the placebo effect.

Clearly, Malzberg is as caustic and bitter as ever. Yet he seriously addresses here the issue of the dehumanization and mechanization of humanity, finding our expectation of miracles, of instant cures, but one aspect of our inhuman plight. It may even be fair to say that he sees the original Freudian approach to analysis as far more humane than more modern therapies, as a full-spectrum, not narrow, not mechanical, view of humanity. He thus becomes a critic of modern delusions, and worth reading in that light alone.

With **Helliconia Winter**, Brian Aldiss completes his grandest opus, the Helliconia trilogy. Since I had less than the kindest of words for the first two volumes, and since I do admire and respect Aldiss, I am pleased to be able to say I liked *Winter* much better than either *Spring* or *Summer*.

Spring had the advantage of introducing a wondrously original world and a story of incomparable sweep and grandeur. That story had to move through most of one of Helliconia's 2600-year "Great years" in order to follow the rise of civilization with spring, its flourishing in summer, and its retrenchment as winter looms, and in order to develop properly the dos-a-dos dance of the competing humanoids and phagors, the ecological necessities of virus-induced body changes and cullings, and so on. Yet when Aldiss moved into *Summer*, I felt he flagged, producing a portentous, boring tale of political intrigue and not much else. And though I found his use of an orbiting colony of Earthlings dedicated to beaming endless real-life soap operas back to Earth for the edification of the masses a nifty conceit, I didn't think it essential to the story.

Now, however, he has convinced me it was all in a good cause. *Helliconia Winter* is a marvelous book in its own right, and it unifies the trilogy in a quite satisfying way. The story is both more direct and more interesting as it tracks Luterin Shokerandit from childhood to soldierhood to defection and return home, enslaved wife of a defeated general in tow, to confront the secular and religious powers that rule his world and attempt to shape it for survival by ruthless regimentation and denial of realities. The story is far more integrated, too, as it knits the interspecies dance into a final figure, brings into the foreground the biology of seasonal adaptation, and portrays the downfall of Earth's satellite observers and the transmogrification of Earth itself in the wake of nuclear winter. The theme becomes a universalization of the Gaia Hypothesis, which suggests that Earth's biosphere maintains its own suitability for life, as Aldiss suggests a guiding world spirit for every living world, Gaia for Earth, the Original Beholder for Helliconia, and the possibility of life-mediated communication between the two.

Looking back at the trilogy, I see that all three books are clearly worth reading. Yet I am left with the feeling that *Summer* is less essential than either of the other two. That one *is* heavier going and less interesting (unless you are a fan of historical romances), and I do think

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that you will get all of Helliconia that you wish if you read only *Spring* and *Winter*. Together, they will give you visions enough, and you will not lose your enthusiasm in *Summer*.

If you thought K. W. Jeter could produce only stories as bizarre as his first, *Dr. Adder*, you need to pick up a copy of **The Glass Hammer**. His new novel is a highly sentimental piece of symbolic theology, and the way it is told is very much a part of the story.

On the surface, we have the tale of Ross Schuyler, misfit in a Western U.S. ruled by the Cathedra Novum, an apparent scion of the Roman Catholic church. He has grown up in a northern parish, surrounded by ice and cold; his home used to be San Francisco, but military weather-modification satellites froze the place. To him, LA is heaven, for the same satellites put that town in an oven, but the church won't let him go. Instead, it puts him on the train to a desolate research station. On the train, he meets the Godfriend, Cynth, whose cult believes they are the genetic stock for the second coming. Earth is Hell, and they do God a favor by refusing sex. Together Schuyler and Cynth survive the station's destruction. Cynth gets pregnant with God (according to her cult), and Schuyler reaches LA at last. There he becomes a sprinter, a driver of fast cars from Phoenix to LA, through the fire-zone of more military satellites, these with particle beam "missiles," delivering bootleg prewar chips to industry and starring in the video shows beamed to the South American workers in their dorms. A woman from the network shows up to encapsulate his life as "human interest," the workers learn of his son and idolize him, and then the treacherous truth brings it all down.

As the book begins, we see Schuyler sitting before a video unit with a stack of tapes. Someone in the background urges him to play the tapes; they are his life, some made for the network, others apparently the product of unofficial monitors. And he watches, giving us his life in bits and pieces, so strung together as to maximize the suspense. We live, says Jeter, only as we observe ourselves living, and video is the God that creates all. But that isn't all he says. There is the character Bischovsky, striving endlessly to reconstruct a Rose Window recovered from the ruins of a San Francisco cathedral. The Window is elusive, however, taking on a host of holy configurations, and Jeter seems to be saying that it itself is God, or perhaps that the light that streams through it is the Holy One.

Clearly, Schuyler is a symbol of life, running from birth to death through storms and fire. Video and Window are both symbols of God, with the obvious choice the false symbol, and both fit the image of the title's Glass Hammer. Some of the book's symbolism is handled in a very interesting way, but all in all, I think there is too much of the stuff. In the end, it gets in the way of the reader's enjoyment, leaving a book whose best use may well be for litcrit classes. But don't let me stop you from enjoying the book. It *is* a good tale, interestingly told, and it will stimulate your brain cells as only the symbolic can.

Philosophy professor Justin Leiber, son of Fritz, has written a sequel to *Beyond Rejection*, which I reviewed some time back. It's **The Sword in the Eye**, and though it seems straight sword-and-sorcery, he assures me that it *is* SF. He gives us a medieval world where life is dominated by intrigue and the House

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of Eigin, a family of masterful leaders, warriors, and seers, is in a decline managed by powerful foes. When his clan is banned, its latest scion takes the name of Kinch, meaning a trick or noose, and bides his time as a scullery worker, a singing sword hidden in his bedding, until conditions begin to change for the better.

Kinch's foes seem led by the Priests of the Eye, a scheming group who have the power to make accurate predictions. In due time, Leiber reveals that their secret lies in their amulets, which are actually small radios; their power is simply that of better communications. When Kinch catches on, he is able to use the same techniques to help defeat the Priests, at least for the nonce. The sequel will presumably tell us more about what the villains are up to and where they get their anachronistic advantages.

Is the story any good? I found it easy enough to read, but not terribly absorbing. Leiber here is less successful in developing his characters and their motivations. Too much seems arbitrary, managed for the sake of the plot, and I was less than satisfied. Perhaps the sequel will rescue the tale.

The astounding Mr. Pohl needs little introduction, and his books need little in the way of review, except to say, "Looky here!" Consider it said: Here's **Black Star Rising**, the tale of an America decades after the U.S. and the Soviets have thoroughly lambasted each other. The Chinese came to help in the rebuilding, and they stayed. Now America is the outermost province of the Red Empire. Our hero, Pettyman Castor, is a bright boy denied a university education because of his white skin. He labors as a commune worker, constantly using the computers to learn all he can about physics and astronomy, while dreaming of going into space. His chance comes when aliens who look human arrive, demanding to speak to the U.S. President. Castor is promptly promoted—thanks to impressive doses of serendipity—and becomes the envoy to a strange world.

Pohl's satiric touch is as strong as ever. Here he lampoons two worldviews at once, the better-red-than-dead and the might-is-all, to considerable effect. I enjoyed the book greatly. May you too.

W. R. Yates's **Diasporah** is as ambitious, but it suffers seriously from the author's inability to skip tedious minutia and from the tale's utter predictability. Yates gives us a future when Israel has been destroyed by Arab nukes but has rebounded to build a space colony. It wanted an L5 orbit, but the world chose to relegate the Israelis to the unstable L2 spot. And that is only the beginning of the antisemitism that isolates tomorrow's Jews. We immediately know what is going on when we learn that the Israelis are preparing an interstellar probe under contract to the UN and that the UN suspects some hidden agenda. All is not what it seems.

What is going on? Clearly, the Israelis are preparing to ride that starship. They are going to cut and run and find a little peace at long last! And so they do, though the story has to plod through excessive amounts of tour-book details about the Israeli colony, puerile secret-agent plotting, and in-from-the-cold angst before it reveals the obvious truth. The book has some nice touches, but not enough. Avoid it.

Terry Carr has managed a nice deal for his **Best SF of the Year 14**, what with a hardbound from Gollancz in England being distributed here by David

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& Charles and the paperback due soon from TOR. But he's been scooped. A full six of Carr's picks simply repeat Gardner Dozois', and Carr's "Recommended Reading" list adds three more. One of the overlaps is John Varley's "Press Enter■," which impressed me mightily when I first read it; however, with each reading, I find myself less pleased with the ending.

It seems certain that Carr is going to lose sales, for many people who buy the massive Dozois *Best* will feel there's not a whole lot of point in paying his price for half a book more. Still, the stories Carr likes but Dozois does not are fine. He gives us Charles Harness's "Summer Solstice," from right here; Dozois' own "Morning Child"; Effinger's "The Aliens Who Knew, I Mean, *Everything*"; Tanith Lee's "A Day in the Skin, or, The Century We Were Out of Them"; Bob Leman's sneaky "Instructions"; Lee Montgomerie's marvelous "Green Hearts"; and Pamela Sargent's "Fears." Only the one is from *Analog*, while four are from *Asimov's*. As usual, Charles Brown's wrap-up of the year reads like a too-dry digest of his excellent news magazine, *Locus*.

Jerry Pournelle's **The Science Fiction Yearbook** is a new kind of Best of the Year anthology, aimed less at displaying a year's best SF than, says Pournelle, at showcasing a few stories that pleased the editor(s) and discussing the state of the art for the year. The book's stories are fine, including William Gibson's "New Rose Hotel," Mike Resnick's "Me and My Shadow," Benford's "Me/Days," Hilbert Schenck's "Silicon Muse," Charles Sheffield's "The Dominus Demonstration," David Brin's "The Crystal Spheres," and five more, from *Analog*, *F&SF*, *Universe 14*, *Playboy*, and elsewhere; only one (Gibson's) appears in the Dozois best, and none in the Carr. The state of the art is discussed in essays by Algis Budrys, Benford, and Gunn. The wrap-up of the year, pro and fan both, by fan Mike Glyer (publisher of the Hugo-winning fanzine *File 770*), I found more interesting than Brown's in the Carr book, even though it leans heavily on the same source. As a whole, the book is quite pleasing, and the added essays make the book in some ways more satisfying than the more traditional display of arguable "Bests."

Gordon Smith is a poet, poetry anthology editor, and fly fisherman who was a close friend to Mervyn Peake, almost from their infancies in China. They went to school together, palled around together, worked together on various projects, and kept a close eye on each other's separate works. Peake died in 1968. In 1984, after all due time had passed, Smith published **Mervyn Peake: A Personal Memoir** with Gollancz in England. Now the book is available from David & Charles Inc. I recommend it.

The book is not an exhaustive biography; Smith directs his readers to his predecessors for that. Rather, it is an intimate recollection of life and personality, illustrated by samples of Peake's art and by bits of his correspondence. We do not feel that the small attention to the Gormenghast trilogy slights us, for Smith's aim is clearly to portray the man in the larger perspective, and thus to tell us about Peake's contribution to fantasy in what may be a more illuminating way. I found the result quite satisfying, for Smith's tale is enchanting in its own right, and he gives enough detail about, for instance, Peake's last illness for us to suspect that he died of what we now call Alzheimer's disease.

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* * *

An unexpected companion piece to the Smith book is **Exploring Fantasy Worlds**, edited by Darrell Schweitzer. This slim volume contains new material on Robert Nathan and James Branch Cabell, but most of its essays are reprinted from years gone by. In particular, Schweitzer gives us the late David H. Keller's "Titus Groan: An Appreciation" (1950) to answer any Smith reader's wish for more on the trilogy. In addition, there are Michael Moorcock on "Aspects of Fantasy"; Sandra Miesel on "Dreams Within Dreams"; de Camp's precursor to his Howard biography; Poul Anderson on "The Fantasy of Johannes V. Jensen"; Leiber on "The Anima Archetype in Science Fantasy"; and Ben Indick's "Portrait of Nathan." Schweitzer's own essay on archaic language in fantasy writing focuses too narrowly on words alone, seriously scanting phraseology, usage, and rhythm.

Marvin Minsky's new book is an attempt to overfly the entire field of **Robotics** and provide "the first authoritative report from the ultimate high-tech frontier." It compiles the visions of workers in the field, science writers, and even SF writer Robert Sheckley, and it does give a decent feel for the state of the art. Minsky himself, founder of MIT's Artificial Intelligence Laboratory, writes the introduction and a concluding projection, "Our Roboticized Future." T.A. Heppenheimer talks about the history and components of artificial intelligence. Philip E. Agre discusses the need of robots for common sense in order to avoid ridiculous errors. Thomas O. Binford discusses machine vision, Hans Moravec the problems of making robots mobile, and Robert A. Freitas discusses cyborgs. Joseph F. Engelberger, founder of America's foremost maker of industrial robots, Unimation, sings the praises of "The Ultimate Worker," Richard Wolkomir lays out the promises of "The Machine Servant," and Robert U. Ayres develops "The automated society." There is talk of new bodies to last us millennia, new buddies, and new helpers, and I wouldn't be a bit surprised if Malzberg were to add it to his indictment of the species (see above).

It takes a while to reach the shining optimism. The first three chapters heavily emphasize the limits on the dreams, the difficulty and quantity of the work yet to be done. Only with Moravec, a researcher at the Robotics Institute of Carnegie-Mellon University, do we see the shift into *Omni*-style futurism, as he develops the idea of giving people mechanical bodies and brains. Thereafter, the book reads much like a public-relations piece. It's all interesting, but the nitty-gritty of just how to accomplish it all would have been more so. Unfortunately, we don't have the nitty-gritty to write about; if we did, the book would be obsolete.

Theodore Sturgeon died in May, as you have surely heard. His obit appeared in my own local paper, the *Bangor Daily News*, in Spider Robinson's in Halifax, and surely in yours. I never met the man, but I have read and enjoyed much of his work over the years, and I honor his memory. Join me.

Sturgeon was, of course, more than a science fiction writer. He was the warm and loving man who taught Spider Robinson how to hug. Spider told me so himself when he called to ask if he could sit out on the Reference Library's back porch and sing spirituals one more time. It seems Robert Heinlein sent him his latest with a request that *he* review

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it. (Why Spider? Maybe Heinlein appreciates any reviewer who always seems to love him. All I know is that I never seem to get review copies of his books!)

Slight bitchin' aside, I told Spider, "Sure—go ahead!" But before I let him do that, let me say a few words about his own latest, **Melancholy Elephants**. It's a collection of thoroughly delightful stories, hitherto available only in a Canadian edition (four of the stories were once collected in *Antinomy*, remaindered during publication when Dell cut out of SF). My favorite is "High Infidelity," about a renowned brain surgeon's remarkable gift to his erotic, role-playing wife. I loved it just a little more than I did the other dozen, some of which gain extra interest from Spider's references to Heinlein as an SF writer in orbit, as Senator Bob, as . . . Enjoy.

And now—"Here's Spidey!"

Huh? Whuzzat? Thou hast done it now, puny mortal! Thou hast disturbed my deep and ancient slumber; unspeakable shall be thy punishment, unsanitary my vengeance, technically illegal the . . . eh?

Oh—a *new Heinlein*? That's all right, then—why didn't you say so? Hand it over, and start the coffee. . . .

Yes, folks, the Old Book Reviewer has come back from hibernation one more time. I swore when I laid down the mantle of Reviewer and yielded myself up to blissful unconsciousness (it must have been a Mickey mantle) that I would return when England needed me . . . or whenever a new Heinlein came out, whichever came first. I'm happy to say that the latter condition now obtains. Needless to say, it was worth waking up for!

The Cat Who Walks Through Walls: A Comedy of Manners was originally titled *The Reluctant Knight* (with the same subtitle). The hero, too, has been through a few name changes when we meet him—and goes through a few more as the story progresses, as do a number of the supporting characters. But those are the least of the surprises to be found up the most capacious sleeve in sf—surprises so delightful that I'm having a great deal of difficulty not spilling the beans. Do you remember how, a while back, in reviewing Heinlein's *Friday*, I said I found some aspects of the ending cryptic, but that it "might just suit the old man's twisted sense of humor to have begun a continued story in his seventies"? It seems that I was right on the money. (Friday herself does not appear anywhere in this book: the only direct connections to her story are brief mentions of Shipstones and the Proxima and Botany Bay colonies, and a quote from Kettle-Belly Baldwin. But those are enough to tie the two fictions together, and to reassure me that I haven't heard the last of Friday.) Just *which* stor(y?)(ies?) it continues, and in what way, I confidently expect you will find astounding. (Say, that wouldn't make a bad title for this magazine, speaking of name changes!)

(In fact, it is becoming clear that everything Heinlein has ever written [in the field of SF] is part of a single, vast continued story. He invented the concept of the Future History, and the first Future History chronography was teased out of him by John W. Campbell and printed in *Astounding* in May 1941. But eventually Heinlein began writing stories which apparently could not be reconciled with the famous chart, and some assumed he had abandoned it. They were premature. He did not abandon it, just extended it into a few more dimensions. [I'm not sure an accurate map could be displayed on paper: too many

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dimensions to squeeze down into two. But it would sure be an interesting challenge for somebody.] Grant him the Burroughs Continua Craft and the logic is impeccable—and delicious.)

Berkley SF editor Susan Allison has been quoted as saying that part of this book "takes place on (sic) the Luna of *The Moon Is a Harsh Mistress*." You have no idea with what diffidence one ventures to correct an editor who owns one's last two and next books, but this is certainly not the Luna Free State that *I* remember. For one thing we see it 112 years later (almost to the day). More important, the glorious ideals of the Revolution seem to be dead, in fact, smothered—after a mere century—in bureaucratic chicanery: there is certainly no freedom in Hong Kong Luna. Nor, it seems, anywhere else in the Solar System.

Certainly not in Golden Rule, the metastable artificial habitat orbiting Luna's terminator, where we first meet our hero, Colonel Colin Campbell. (Could he possibly be descended from a certain other Campbell? He *is*, it turns out, a professional writer. . . .) Which is odd, considering the habitat's apparent nature: a pay-as-you-go libertarian's dream whose only law is expressed in its name. It looks and sounds quite a bit like a number of SF utopias of recent years—at least at first.

But one evening when Campbell is dining out, a stranger sits down at his table and tries to recruit him to assassinate the second most powerful man in Golden Rule—invoking for the purpose a name which he should *not* know. But before he can persuade Campbell to accept the commission, the stranger is himself shot by persons unknown and dies on Campbell's dinner. Returning home, Campbell finds that he and his beloved have been evicted from Golden Rule without notice or explanation, by order of The Management; when they head for Luna together the computer of their rental Volvo crashes during landing—and shortly, of course, so do they. . . .

This is just for openers; Heinlein sustains this madcap pace for 131,339 words that had me yelping aloud with glee approximately once every 660 words (199 times total). In many ways *The Cat who Walks Through Walls* reminds me of Alfie Bester (the work and the man): a jovial carnival barker who keeps up a nonstop mesmerizing rap while stuffing peas up your nose with one hand, dropping lit firecrackers into your shorts with the other, and picking your pocket with a third—and makes you like it. *Cat* is a footrace across a minefield, breathtaking and fun, a great careening roller-coaster of a book that keeps yanking you along by your clutching fingertips through a high-speed carwash while monkeys, kittens and small girls assail all your ticklish places. . . .

And it ends in mid-air, resolved, but just barely—*more* than wide-open for a sequel. Heinlein has played this joke in the past, in *Friday*, in *I Will Fear no Evil*, in *Time Enough for Love*—left you desperate to know *what, dammit, happened next?*—but never more maddeningly than here. Having spent the last 48% of the book setting me up to witness the return of one of my favorite Heinlein characters of all space/time, he rings down the curtain just as said character is about to take the stage—and that ain't the worst of it, though it's all I can say here.

I keep remembering his Guest of Honor speech at MidAmeriCon. He placed a timer on the podium, set it for thirty minutes. "When that rings," he said, "I'm leaving." He then proceeded to tell six (or possibly seven) improbable

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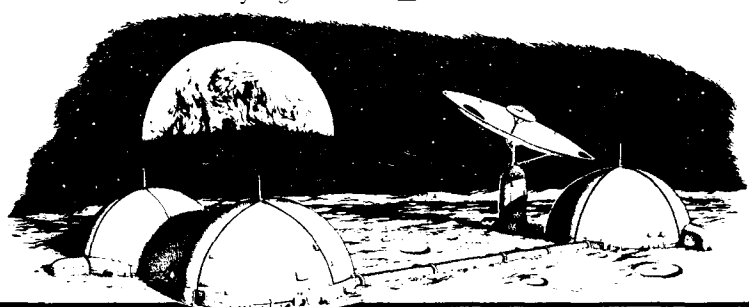
stories at the same time, Casey Stengel style, interspersing them with commentary and shifting from one to another at apparent random. He had brought four (or possibly five) of the threads to conclusion, and seemed to be working toward tying them all into some Grand Scheme with the last two (one had to do with how his uncle came to be married to three women at the same time; I misremember the other), when the timer rang. He chopped off in midword, spun on his heel and left the stage to thunderous applause.

Robert Heinlein is seventy-eight as I write these words, and if (Allah forfend)his Timer should ring before he writes the sequel to *The Cat who Walks Through Walls*, I will *kill* him.

Meanwhile I recommend it to you wholeheartedly.

Thanks for the loan of the soapbox, Tom. *Yawn!* Good night, folks. (And sweet dreams to Theodore Sturgeon, who gave me my first soapbox, who taught me how to blesh when I was eight, and taught me how to hug when I was thirty-five. Rest in peace, Ted.) ■



IT'S ANLAB TIME AGAIN!

This issue completes 1985 for *Analog;* now it's time for you to let us know how we're doing. The authors are interested, I'm interested, and you should be interested—because your feedback about your likes and dislikes will have a second-order feedback on what we offer you in the future. So please vote. Here's how:

Look over all your copies of *Analog* dated 1985, or refer to the index to 1985 which will appear in our next issue. Pick your *three* favorites in each of the following categories: serial, novella/novelette (a single category), short story, science fact article, and cover. Then drop us a line listing your choices, in order of preference. We'll tabulate the votes and let you know how they came out.

Send your votes to: Anlab, *Analog,* Davis Publications, Inc., 380 Lexington Ave., New York, NY 10017. They must be received by February 1, 1986.

—The Editor

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brass tacks

Dear Dr. Schmidt:

Thanks for the decent review Tom Easton gave my book, *Philip K. Dick: In His Own Words*, in the *Analog* for May. (Or thank him for me.) He is correct about the inordinate number of typos in the first edition of that book; we have, however, cleaned up almost all of them (I'll never say "all of them") for the second printing, which should be available by the time this gets published.

Your readers may also be interested to know that both *In His Own Words* and the new *Philip K. Dick: The Last Testament* (about the author's religious and philosophical experiences) are now available for $9.95 each from my publisher, Fragments West/The Valentine Press, 3908 E. 4th St., Long Beach, CA 90814, which may be a "small outfit" but has produced, I think, a couple of handsomely made books. If I had waited for New York to print my books, they still wouldn't be.

GREGG RICKMAN

San Francisco, CA

Dear Stan;

I've got a few comments to make on the May issue of *Analog*. To start at the beginning, there's your editorial. "Garbage In, Gospel Out" is NOT limited to computers! I have met all sorts of people who believe all sorts of bizarre things, solely because some "reliable source" told the things to them. There are people who believe that FDR knew in advance about the attack on Pearl Harbor, or that the government is hushing up the truth about flying saucers, or that fluoridated water is a Commie plot. They know because they read it somewhere once, or because they heard about it from a source who "really knows something." No amount of evidence or argument can make them change their

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minds. I've been in classes with students (and a few instructors) who know that their unique version of history is right, and everyone else has it wrong.

I don't think that computers (or oracles) have any special mystique. The problem may be that most people are willing to accept any sort of "authority," no matter how spurious it may be. Things such as the printed page, a talking head on the TV news, or an (alleged) insider's words carry a certain amount of authority. Accepting an authority's word at face value saves the recipient the trouble of finding the truth for himself. Questioning everything is out of the question, but that's no excuse for complete uncriticality.

Michael P. Kube-McDowell's "Babytrap" is no doubt going to catch a lot of flak from several directions. I found it to be a very convincing portrait of the banality of evil; K-M did some very artistic work here. Wohlford and Lichtman sound like quite a few historical evildoers, rationalizing their acts. Lichtman's reason for hating his victims parallels some historical cases—some of the most rabidly anti-Semitic Nazis were themselves part Jewish (and Hitler himself had this unfounded belief that he was one-quarter Jewish); one of the reasons that Stalin was so rabid about pursuing "enemies of the revolution" was that he had once worked for the Okhrana, the tsarist secret police. Extremism can be a form of protective coloration.

Speaking of flak, Robert W. Gail's letter about "Friendly Environment" is something I can't pass by without comment. I think he'd be astonished to know that the story did, indeed, benefit from your editing. Mr. Gail's lapses in logic and non sequiturs are disappointing. If he would take the trouble to read all of page 102, and Bob's conversation with Neuthal, he might find that the story isn't quite as viciously anti-environmentalist as he feels. I'd suggest that he stop marking passages and start reading them.

BILL THOMPSON

Dear Stan:

My coauthors and I enjoy the mail we receive in response to our articles, but sometimes it is difficult to answer the letters on an individual basis, especially when a question or objection is not clearly posed. It might be appropriate then to write a general reply to our readers: presumably if one person has a question, at least ten others have the same one as well. Thus, regarding "The Garden of Cosmological Delights," by G.F.R. Ellis and myself in the May 1985 *Analog*:

One reader was apparently confused by our discussion of Mach's Principle which was, admittedly, rather concise. When you are in a car, on perfect shocks, moving straight and at constant speed, you feel nothing. You might as well be sitting at home. We say the car is an *inertial frame of reference*. Since the time of Newton it has been understood that all inertial frames are equivalent—that is, sitting in a car that travels at a constant velocity is equivalent to sitting at home as far as physics is concerned. But suddenly the car turns a corner and you are thrown to the side by a centrifugal force. Why? It used to be said that you now entered a *non-inertial* frame because you were accelerating (in this case turning a corner.) This doesn't explain much, especially to a relativist, who believes that you must always accelerate relative to something and who will argue that I can always construct a frame of reference in which the centrifugal force will vanish. So how does this non-inertial frame differ from

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an inertial frame? Mach, an early relativist, argued that the distant stars define the inertial frame with respect to which we measure accelerations. If these stars were absent, he maintained, we would not feel accelerations like centrifugal forces. This statement is known as Mach's Principle. It is interesting to note that although Einstein initially intended the general theory of relativity to incorporate Mach's Principle, the final result turns out to violate it. That is, in general relativity, inertial forces can exist even in empty space. Many scientists feel that this is a flaw in GR and have developed other theories to correct it. Unfortunately, these alternate theories are not very successful.

A second reader felt there was an inconsistency in discussions of quasar velocities and the age of the universe. If we see quasars moving away from us at one-third the speed of light and can see as far as ten billion light years, then the age of the universe should be at least 30 billion years, not ten or twenty as usually stated. The problem here lies in the loose-play with numbers. The redshift of quasars tells you their velocity but does not directly tell you their distance; you need to know the Hubble constant as well. The Hubble constant, roughly speaking, is the reciprocal of the age of the universe. Measurements of the Hubble constant are difficult and we can only say that it probably lies between 50 and 100 km per megaparsec per second. Translated into more ordinary units this means the universe is between 10 and 20 billion years old. However, the lower figure runs into trouble with some stellar ages, which are apparently over 10 billion years.

The same reader wondered how we can speak of the universe expanding if it is already infinite in extent. By expansion, we mean precisely that each galaxy is getting farther apart from its neighbors. There is no reason this cannot happen in an infinite universe. However, the reader's conceptual difficulty is quite understandable. In Newtonian physics it is very difficult to imagine how an infinite universe may contract or expand. There should be infinite gravitational forces acting in all directions which would (presumably) all cancel out and nothing would happen. This debate has been going on since Newton and it was only by abandoning the idea of forces and resorting to fields that Einstein arrived at the correct picture. Modern "Newtonian" models of the universe were actually developed *after* Einstein's theory as illustrations of relativity.

A third reader wondered if G.F.R. and myself are instructors and, if so, would it be possible to sit in on some classes. George is a Professor at the University of Cape Town and also the Cape Town Chairman of the South African Institute of Race Relations, among his many activities. He is coauthor of a very famous textbook with Stephen Hawking called *The Large-Scale Structure of Spacetime*. I don't recommend that you buy it unless you are a professional cosmologist. I received my Ph.D. a few years ago at the Center for Relativity at the University of Texas, Austin. Since then I have done post-doctoral work at Oxford and Moscow and am now working with George in Cape Town. I've also just finished a very long, four-volume novel and a collection of stories about Russia. Cape Town is a long way to come for classes, but we'd be happy to have you. We are frequently to be found in Texas.

As to reprints, that's up to Stan. A long-delayed Dover Books anthology of

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our articles should see the light of day this year. It includes expanded versions of articles that have appeared in *Analog*, *IAsfm*, responses to readers, and two or three articles that have not yet been published. A second collection is underway which will tentatively include "Garden" as well as articles on Galois, nuclear winter, geodesic domes, entropy, and other topics. I hope a few appear here, but that's largely up to Stan and my agent.

I might use this occasion to rectify a few misprints in "Garden." (Unfortunately, the proofs had to be corrected over a crackly transatlantic telephone line.)

On figure 3, the vertical axis should have been vertical with ticks indicating percentage of helium.

On page 46, second column, the missing reference is to "Coincidences in Nature and the Hunt for the Anthropic Principle," by B. Carr and myself, which appeared in *IAsfm* in October 1982.

On page 47, the parenthetical remark in the first column should read, "They had better cancel; a force over a force or a size over a size has no units."

One or two proportional signs were left out on page 47, but it's fairly obvious where.

TONY ROTHMAN

Dear Stan,

I thoroughly enjoyed Stine's article on the computer mystique, and our own experiences agree fully with his comments.

Juanita has a Kay-Pro 10 word processor; a reputable company, which is one reason she chose it. Recently it quit working, so she took it down to her dealer. His explanation after what he said was lengthy testing, by experts, was that the hard disc had been "destroyed" (rendered incapable of operation) and the machine needed a new one, for $500 or so. He also said that (a) it was out of warranty, and (b) he was no longer a Kay-Pro dealer.

Fortunately, science fiction fandom has quite a number of computer programmers and hackers in its membership (I'm emphatically not one of them) and a friend came by, picked the machine up, and took it to a gathering of experts (wizards?) for checking. We just got their report; the hard disc is still quite usable, and much of the damage to the programs was done by the previous repairmen, though there was an initial problem that started it all. They expect to have it fully operational by the time we can get over to pick it up from them, which may be a few weeks.

I assume the moral of all this is that fannish magicians are superior to mundane magicians. They come cheaper, too. . . .

ROBERT COULSON ■

● Why explore the Universe? It is almost ironic that we should have to ask this question because it is almost as though we have to apologize for our highest attributes...we went to Mars, not because of our technology, but because of our imagination.

Norman Cousins

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a calendar of analog upcoming events

11-13 December
Second Conference on Artificial Intelligent Applications (IEEE) at Miami Beach, Fla. Info: Artificial Intelligence Conference, Box 639, Silver Spring MD 20901.

16-20 December
First International Conference on Supercomputing Systems (IEEE) at Tarpon Springs, Fla. Info: Artificial Intelligence Conference, Box 639, Silver Spring MD 20901.

24-25 December
POLECON MCMLXXXV (High Arctic Fantasy Conference) at the Hotel Ursa Minor, N.P. Guest of Honor—to be announced. Registration limited to good little boys and girls. Info: Polecon 85, c/o K. Kringle, Workshop NP 99799.

27-29 December
EVECON at Washington, D.C. Registration—$10 in advance, $15 at the door. Info: FanTek, Box 128, Aberdeen MD 21001.

10-12 January 1986
ISLAND-CON (Long Island SF conference) at the Long Island Marriot, Uniondale, N.Y. Guest of Honor—David Brin. Registration—$15 until 31 August, $17 to 31 December. Info: Island-Con, 45 Newburgh Street, Elmont NY 11003.

12-14 January
ARTICON (art-oriented SF conference) at Washington, D.C. Fan Guest of Honor—Bjo Trimble, Guest Cartoonist—Steve Stiles. Registration—$15 until 30 November, then $20. Info: WACO, Box 335, Arnold MD 21012.

28 August-1 September 1986
CONFEDERATION (44th World Science Fiction Convention) at Atlanta, Georgia. Guest of Honor—Ray Bradbury, Fan Guest of Honor—Terry Carr, TM—Bob Shaw Registration—$25 supporting; $45 until 1 August 1985. This is the SF universe's annual get-together. Professionals and readers from all over the world will be in attendance. Talks, panels, films, fancy dress competition, the works. Join now and get to nominate and vote for the Hugo awards and the John W. Campbell Award for Best New Writer. Info: ConFederation, 2500 North Atlanta Street #1986, Smyrna GA 30080. (404) 438-3943.

—Anthony Lewis

Items for the Calendar should be sent to the Editorial Offices six months in advance of the event.

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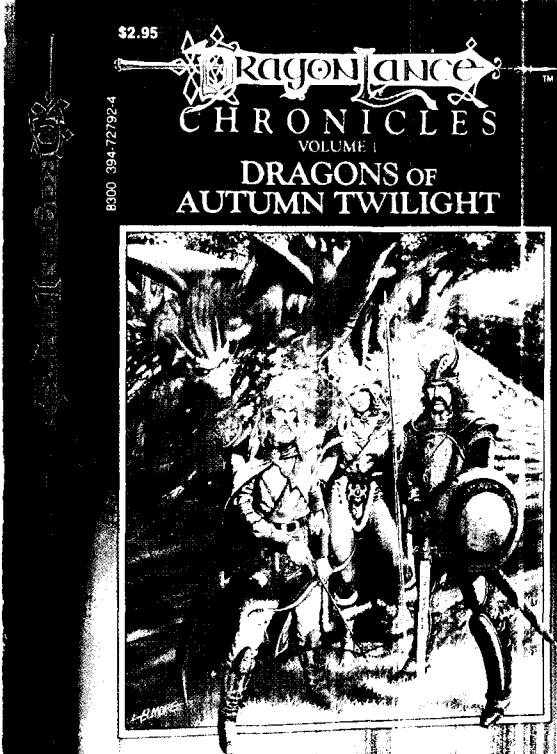

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